ACUMEN™

EON-2027HS

EON-2028HS

HYDRA-ALERT™ HRM

EON-2027HS

Featuring Fluid Check™, Heat Index, Heart Rate Monitor

HYDRA-ALERT™ HRM PC

EON-2028HS

Featuring Fluid Check™, Heat Index, Heart Rate Monitor and 2-Way PC communication

INSTRUCTION MANUAL

- Build-in Temperature & Humidity sensor
- Heat Index
- Rechargeable
- Fluid Check™ Monitoring
- Heart Rate
- Analog And Digital Time
- Stopwatch
- In-Zone-Goal Countdown Timer
- 3 EZ-Set Target Zones
- Nite Lite
- Date and Day of the Week
- Fitness Index
- 99 Lap Counter
- Annual/Weekly Event Reminder

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Button	Function
☼/SET Button Ⓐ	• Press momentarily to activate the light for 3 seconds; • Press & hold for 3 seconds to enter or exit the set mode; to enter or exit the Program Mode from the analog time display. • Press & hold for 3 seconds in the Recall Data Mode to enter reset stopwatch mode.
▲/STR/LAP Button Ⓑ	• Press momentarily to start the stopwatch; to record a lap when the stopwatch is running; to increase the digits in the setting mode (press and hold to change it fast).
▼/STR/RESR/•)) Button Ⓒ	• Press momentarily to stop the stopwatch; to decrease the digits in the setting mode (press and hold to change it fast). • Press & hold for 3 seconds in the Recall Data Mode to enter clear data mode when the stopwatch is stopped. • Press & hold for 3 seconds in the Recall Data Mode to enter the Basic Setting Mode while there no data in watch's memory and the stopwatch is stopped. • Press & hold for 3 seconds in the Chrono Mode to activate/deactivate the out of zone alarm when the stopwatch is running or reset.
MODE/NXT Button Ⓓ	• Press momentarily to change modes; to proceed to the next item in the setting mode.

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Featuring Fluid Check™, Heat Index, Heart Rate Monitor and 2-Way PC communication

INSTRUCTION MANUAL

Part I

Getting to Know Hydra-Alert™

Part II

How to Operate Your Hydra-Alert™

Part III

Technical Reference

Part IV

Precautions, Warranty Service and Repair

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Congratulations!

Welcome to the future of hydration technology! Your purchase today shows that you are serious about your exercise and are committed to achieving your best. Today, getting the most from your exercise doesnít necessarily mean you have to spend longer periods of time to achieve those goals. With **Fluid Check™** Training, you will increase the effectiveness of your workout by monitoring and quantifying your results every step of the way. The **Hydra-Alert™** will act as your personal coach and guide you to your fitness goals more effectively.

Mission Statement

At Acumen we have listened to what people such as yourself have been asking for in fitness equipment and are committed to your satisfaction. We know you will enjoy all of the innovative features of the **Hydra-Alert™** and the ease of use incorporated into our products. If you ever have any questions, comments or suggestions, please write or call our staff. We greatly value your feedback and look forward to continuing to provide you with products and support that is second to none. Thank you for your purchase and anticipated support.

Product Development Team

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Part I

Getting to Know Your Hydra-Alert™

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Hydra-Alert™ Features

- **Fluid Check™** for Safeguarding Against Dehydration
- Build-in sensor for detecting Temperature and Humidity
- 2-Way PC Communication (USB)(Optional)
- Display Heat Index
- MAX MET (VO2 MAX) Calibration
- Fitness Index
- Heart Rate Monitoring
- Three separate EZ-Set Target Zone with Visual and Audible alarms
- Records and Display Time Below / Above / Within TZ
- In-Zone-Goal Count Down Timer (0-60 min)
- Heart Rate Sampling: 5, 15, 30, 60 sec or 5 min
- 99 Lap Counter / 50 Lap Memory over 1 Exercise Session
- Interval Timer
- Easy to Read Stopwatch
- Dual Display for Analog and Digital Time
- Weekly and Annual Event Reminder
- Date and Day Display
- Daily Alarm
- Nite Lite with Smart Lite Function
- Scratch Resistant Crystal Lens
- Water Resistant to 30 Meters
- Rechargeable Battery

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Computer Interface:

- 2-Way PC Communication (USB)
- Windows™ 98 (2nd edition) Compatible
- Printout files and Program Settings
- Download and Save Data for Long Term Memory
- Overlap Workouts and Track Progress

System Requirements:

- Windows™ 98 (2nd edition) or Newer
- Hard Disk 50 MB Free (min.)
- Ram: 64MB (min.)
- USB Port Required

- **All PC downloading related function are optional for EON-2027HS.**
- **Ask Your Dealer for the Optional Activity Manager PC Software Kit.**

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What's in Your Package

EON-2027HS package includes:

A. **EON-2027HS** Watch
B. Wireless ECG-Accurate Transmitter Belt
C. **CrossTrack™** Software for easily Monitoring and Tracking Process
D. Instruction Manual
E. Body Fluid Monitoring Guide
F. Charger
G. Charger Connector
H. AC / DC Transformer
I. An additional Battery Package (includes: a CR2032 battery & a rubber pad)

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EON-2028HS package includes:

A. **EON-2028HS** Watch
B. Wireless ECG-Accurate Transmitter Belt
C. **CrossTrack**™ Software for easily Monitoring and Tracking Process
D. Instruction Manual
E. Body Fluid Monitoring Guide
F. Activity Manager PC Software
G. PC Interface and Charger
H. PC Interface and Charger Connector
I. USB Cable
J. AC/DC Transformer
K. An additional Battery Package (includes: a CR2032 battery & a rubber pad)

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G

H

I

J

K

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Buttons and Functions

Definition of the buttons:

☀ **:** Night Lite •)) **:** Alarm **NXT:** Next
STR/LAP: Start/Lap **STP:** Stop

☀ /SET Button Ⓐ

- Press momentarily to activate the light for 3 seconds;
- Press & hold for 3 seconds to enter or exit the set mode; to enter or exit the **Program Mode** from the analog time display.
- Press & hold for 3 seconds in the **Recall Data Mode** to enter **Reset Stopwatch Mode**.

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▲ /STR/LAP Button Ⓑ

- Press momentarily to start the stopwatch; to record a lap when the stopwatch is running; to increase the digits in the **Setting Mode** (press and hold to change it fast)

▼/STP/RESET/•)) Button Ⓒ

- Press momentarily to stop the stopwatch; to decrease the digits in the **Setting Mode** (press and hold to change it fast).
- Press & hold for 3 seconds in the **Recall Data Mode** to enter clear data mode when the stopwatch is stopped.
- Press & hold for 3 seconds in the **Recall Data Mode** to enter the **Basic Setting Mode** while there no data in watchís memory and the stopwatch is stopped.
- Press & hold for 3 seconds in the **Chrono Mode** to activate/deactivate the out of zone alarm when the stopwatch is running or reset.

MODE/NXT Button Ⓓ

- Press momentarily to change modes; to proceed to the next item in the setting mode.

Note: All buttons produce one short beep when pressed. Press and hold operation also produces another beep. When the daily alarm is beeping, it can be silenced by pressing any botton.

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Overview

When MODE/NXT Button (D) is pressed, the modes of **Hydra-Alert™** are displayed in the following sequence:

- Time, Calendar and Heat Index Mode
  - Press (D) Button → Fluid Check™ Mode (Set Fluid Loss Related Settings)
    - Press (D) Button → Select TZ Mode
      - Press & hold (A) Button → Set Heart Rate Limits
      - Press (D) Button → Interval Timer Mode
        - Press & hold (A) Button → Set Interval Timer
        - When the Interval Timer is set to "ON"
      - Press (D) Button → Chrono Mode
      - Press (D) Button → Recall Data Mode
        - Press & hold (A) Button after clearing the memory → Set Exercise Related Settings
  - Press (B) Button → Analog Time Display
    - Press & hold (A) Button → Set All Program Settings
    - Press (B) Button → Digital Time Display
      - Press & hold (A) Button → Set Time
      - Press (B) Button → Calendar Display
        - Press & hold (A) Button → Set Calendar
        - Press (B) Button → Humidity Display
          - Press (B) Button → Temperature Display
            - Press (B) Button → Heat Index Display
  - Press (D) Button → Time, Calendar and Heat Index Mode

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GETTING GOING

Charging the Battery

CAUTION - ONLY CHARGE WITH A RECHARGEABLE, LITHIUM BATTERY (LIR 2032) AND THE 110-VOLT(1) OR 230-VOLT(2) AC/DC TRANSFORMER PROVIDED. OTHER BATTERY AND TRANSFORMER WILL CAUSE INJUREY AND DAMAGE.

*(1) For US only (2) For European country

Fig.1

The watch must be fully charged before its initial use. When the watch displays ì**LOW BATT**.î (as shown in Figure 1) means the battery in your watch need to be charged, please follow the below sequences to charge the battery:

Step 1: Use the **Connector** with one end clamp to the watch and the other end connect with the **PC Interface and Charger** (for EON-2028HS) or **Charger** (for EON-2027HS). Make sure the three pins in the clamp are properly in contact with the three contacting points on the watch. (as shown in Figure 2 & 3)

Fig.2

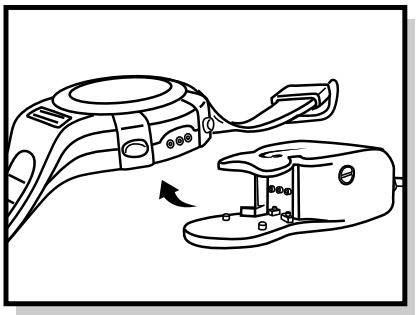
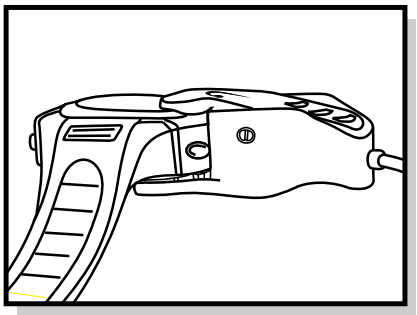


Fig.3



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Step 2: Use the supplied **Transformer**, one end connect with the **PC Interface and Charger** (for EON-2028HS) or **Charger** (for EON-2027HS), the other end plug into a proper voltage AC wall outlet.

When the light on the **Charger** turns from red to green, indicates the battery is fully charged. (Note: For the purpose of watch only, the battery will last for about 3 weeks. If you fully utilize the Fluid Loss and Heart Rate features (optional) for 1 hour everyday, the battery has to be re-charged for every week.)

Note:

1) The first time you try connecting the watch to the connector. Center the connector so that it is guided between the 2 mode buttons on the watch before it is fully inserted.
2) The bottom tab on the connector when properly inserted should be flush with the bottom of the watch. (as shown in Figure 3)
3) When the watch and connector are properly connected, the LED on the Charger will light up as red.
4) To achieve the best performance out of the watch battery, it is recommended to charge the watch for at least 12-hour before its initial use.
5) If you fully utilize the Fluid Loss and Heart Rate features for an average of 1-hour a day, you are recommended to recharge the watch once a week. (For Time purpose only, the watch should last about 3 weeks.)
6) To ensure a longer period of the battery life, we recommend you to charge the battery immediately when the low-battery warning (i.e. "LOW BATT.") appears on the watch.
7) After the first low battery warning comes on for 15 minutes, the EL, Heart Rate, Humidity & Temperature features will be turned off in saving the battery energy.
8) When you charge the watch after it shut down, it will first enter Time & Calendar Setting Mode automatically, that enable you to adjust the time and calendar for the watch. After you finish the setting, it exits to the normal mode. Your personal settings and exercise data for your last exercise are well kept by the watch.

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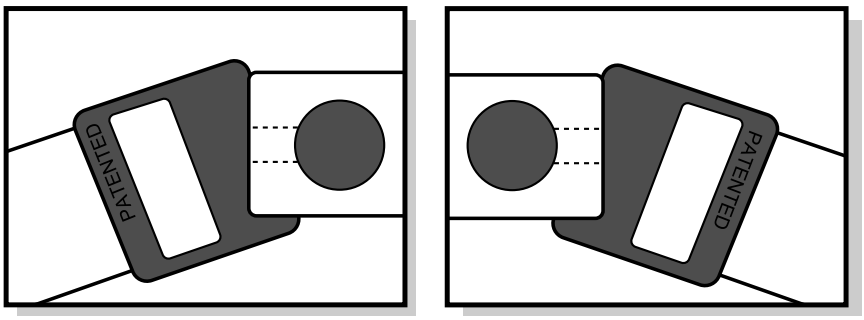
Part I

Attaching Your Heart Rate Monitor

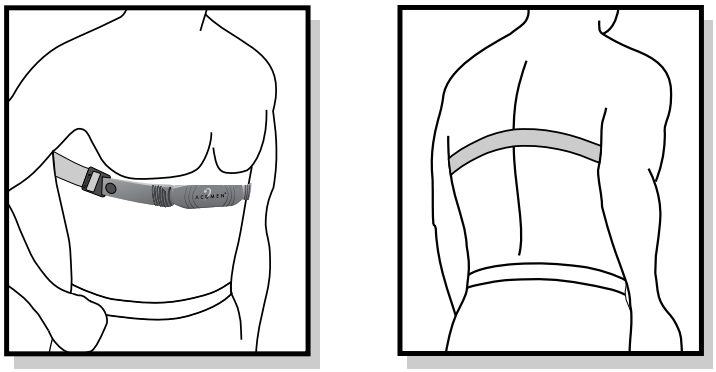
1. Attach the adjustable strap to transmitter belt. Insert round end of clip through the hole and twist gently. (Fig.1)

Fig. 1



2. Strap the transmitter belt around your chest.
3. Adjust the tension of the elastic strap to fit snugly, but comfortably around your chest (Fig.2)

Fig. 2



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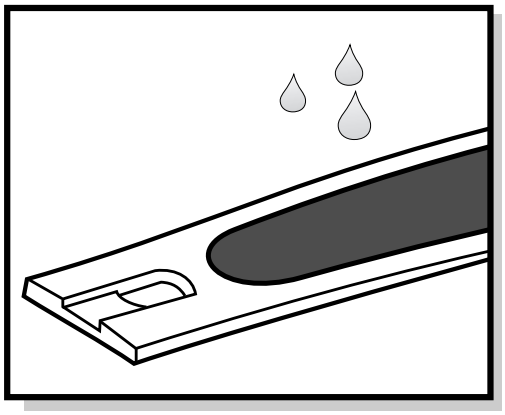
4. Moisten the transmitter electrodes by applying a small drop of water on each of the two contact areas. (Fig. 3)

Fig. 3



Using your watch

The watch does not have to be worn on your wrist to register your heart rate, but it must be within 3 feet of your transmitter belt.

You must be in the **Chrono Mode** to view the heart rate information. Press MODE/NXT Button Ⓓ four times to enter **Chrono Mode**.

Note:

If the watch receives no heart rate signal for 15 seconds, Heart Rate Mode will automatically turn off. To reactivate the Heart Rate Mode, press and hold SET button Ⓐ while in the **Chrono Mode**.

The Hydra-Alert™ with advanced Fluid Check™ feature, for best estimate your Fluid Loss and calories, please do MET Calibration before exercise. (refer to Page 37)

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Part II

How to Operate Your Hydra-Alert™

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Time, Calendar, Heat Index Mode

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Time, Calendar, Heat Index Mode

Part II

In this mode, user can view Time, Calendar, Time Alarm Settings, Humidity, Temperature & Heat Index reading. And Set Time, Calendar & Time Alarm.

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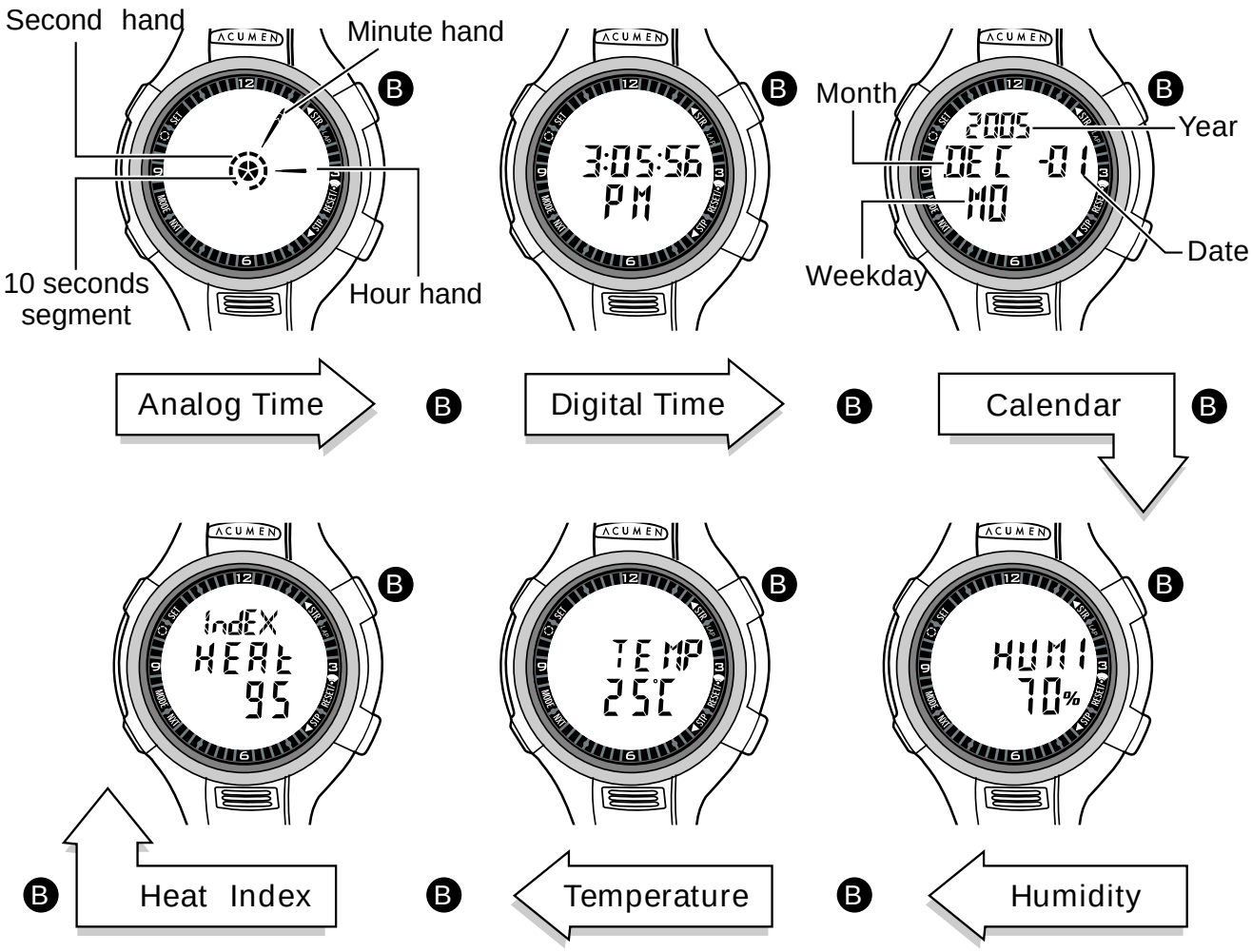
To View Analog Time, Digital Time, Calendar, Humidity, Temperature & Heat Index

Starting from the Analog Time Display, press STR/LAP Button B repeatedly to toggle the displays as followed:



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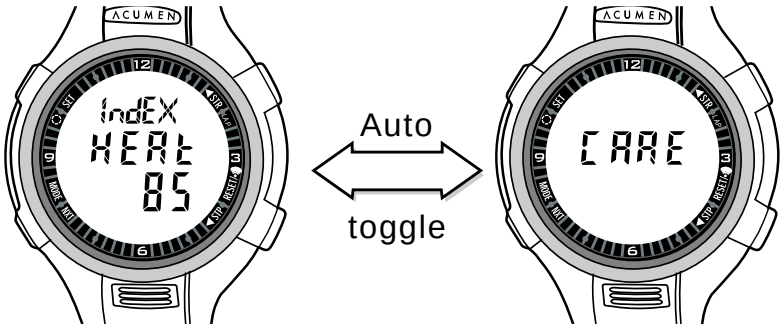
Tips:

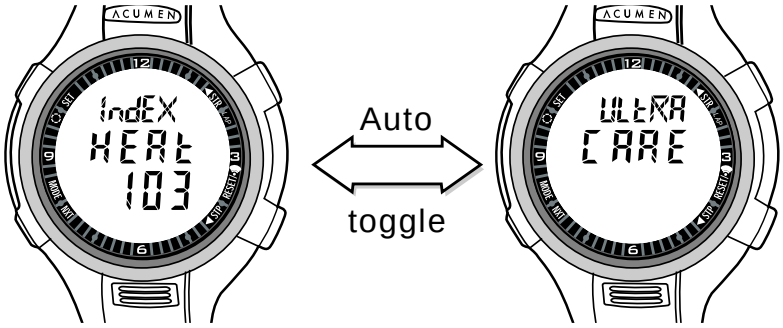
1) Press & hold EL Button Ⓐ for 3 seconds when in the Temperature display will change the Temperature Display in Fahrenheit or Celsius.

2) When you switch to the Heat Index Display (referred to page 88 to get to know the Heat Index) and its value currently at a very high level, the watch will alert you by toggling between the Heat Index value and warnings indication as followed:

Range: 80 - 89



Range: 90 - 104



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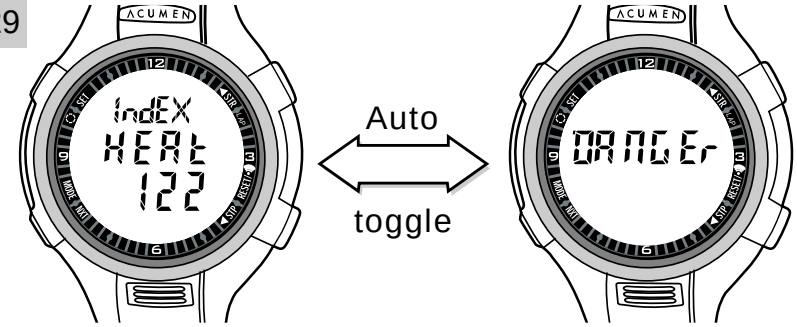
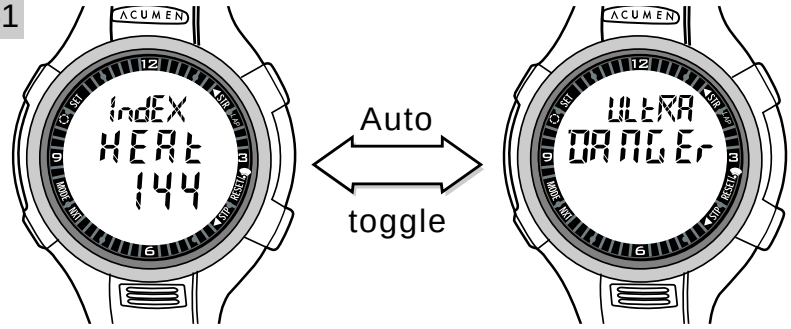
Range: 105 - 129



Range: 130 - 151



Note:

Our latest formula for Hydration and Heat Index are based on the Bodies Radiant Temperature and the Humidity around the body. The values shown on your watch when it is worn on the wrist are your Bodies Radiant Temperature, Humidity around the body and the Body Heat Index. To get the ambient temperature, humidity and heat index, please remove the watch from the wrist and allow at least 15-20 minutes before reading.

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Setting the Time

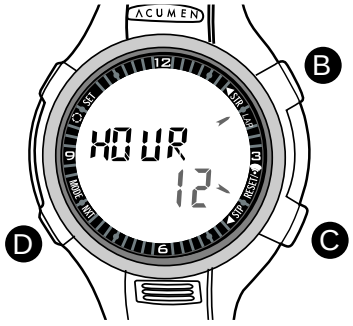
From the Digital Time display, press & hold SET Button Ⓐ for 3 seconds to enter the Set Mode.

Tips:

1) There are two arrows on the LCD display to indicate the Adjust Buttons.
2) If no button is pressed for 60 seconds, the watch will automatically exit the Setting Mode.
3) Press & hold SET Button Ⓐ for 3 seconds at any time will exit the Setting Mode.

Step 1

- 12/24 Hour Time Display Format (blinking)
  - Press STR/LAP Button Ⓑ or STP/RESET Button Ⓒ to select 12 or 24 hour time.
  - Press MODE/NXT Button Ⓓ to proceed to the next item. (If you have selected 24 hour time , go to step 3.)



Step 2

- AM/PM (blinking)
  - Press STR/LAP Button Ⓑ or STP/RESET Button Ⓒ to select AM or PM.
  - Press MODE/NXT Button Ⓓ to proceed to the next item.

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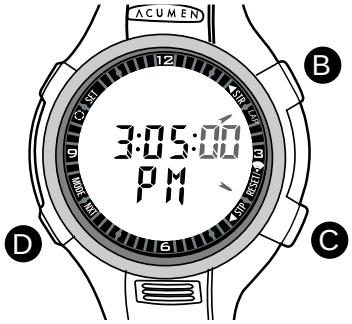
Step 3

- Hour (blinking)
  - Press STR/LAP Button Ⓑ or STP/RESET Button Ⓒ to adjust the value.
  - Press MODE/NXT Button Ⓓ to proceed to the next item.

Step 4

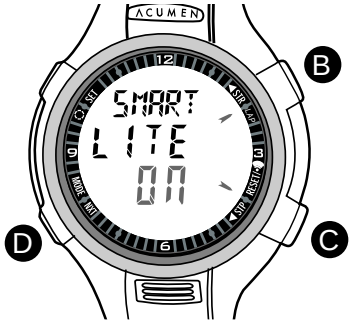
- Minute (blinking)
  - Press STR/LAP Button Ⓑ or STP/RESET Button Ⓒ to adjust the value.
  - Press MODE/NXT Button Ⓓ to proceed to the next item.



Step 5

- Second (blinking)
  - Press STR/LAP Button Ⓑ or STP/RESET Button Ⓒ to reset the value to zero.
  - Press MODE/NXT Button Ⓓ to proceed to the next item.

Step 6



- Smart Lite (blinking)
  This feature will activate the Nite Lite for 1.5 seconds between 6pm and 6am with any button pressed.
  - Press STR/LAP Button Ⓑ or STP/RESET Button Ⓒ to set the Smart Lite to ON or OFF.
  - Press MODE/NXT Button Ⓓ to exit and return to the Digital Display.

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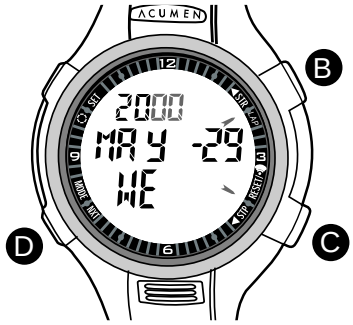
Setting the Calendar

From the Calendar Display, press & hold SET Button Ⓐ for 3 seconds to enter the Setting Mode.

Step 1



- Year (blinking)
  - Press STR/LAP Button Ⓑ or STP/ RESET Button Ⓒ to adjust the value.
  - Press MODE/NXT Button Ⓓ to proceed to the next item.

Step 2

- Month (blinking)
  - Press STR/LAP Button Ⓑ or STP/RESET Button Ⓒ to adjust the value.
  - Press MODE/NXT Button Ⓓ to proceed to the next item.

Step 3

- Date (blinking)
  - Press STR/LAP Button Ⓑ or STP/ RESET Button Ⓒ to adjust the value.
  - Press MODE/NXT Button Ⓓ to exit and return to the Calendar display.

Note: The weekday is automatically set according to the year, month and date entered.

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Alarm with Event Reminder Feature

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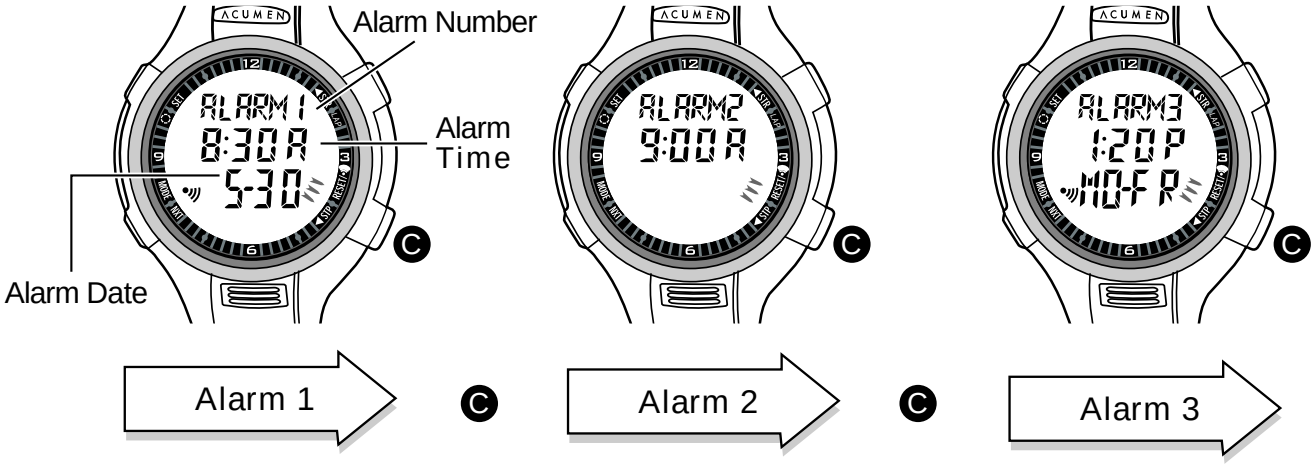
Alarm with Event Reminder Feature

The Hydra-Alert™ includes three alarms, which can be programmed to operate independently.

The alarm can act as your Event Reminder if you set it to a specific day or date. It will begin to beep 12 hours before the set time. It will beep and flash once every hour for the 12 hours prior to the set time. It will beep and flash for 1 minute when it reaches the set time.

To View the Alarm Settings

From the Time/Calendar Mode (i.e.Analog Time, Digital Time, Calendar, Humidity, Temperature & Heat Index Display), press STP/RESET Button C repeatedly to display the settings of Alarm1, Alarm2 and Alarm3, then back to Analog Time Display.



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Setting the Alarm

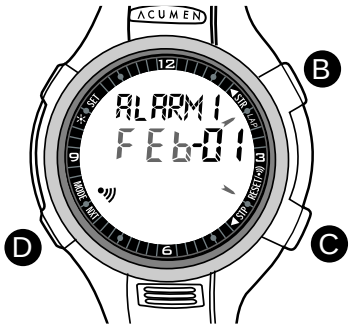
From the Alarm1, Alarm2 or Alarm3 Display, press & hold SET Button Ⓐ to enter the Setting Mode.

Step 1

- Alarm Day (blinking)
  - Press STR/LAP Button Ⓑ or STP/RESET Button Ⓒ to select the alarm days. The choices include: Daily or MO, TU, WE, TH, FR, SA, SU or MO- FR or MO-SA or Date (e.g. JAN-01).
  - Press MODE/NXT Button Ⓓ to proceed to the next item. (If you do not want to set a specific day go to step 4.)

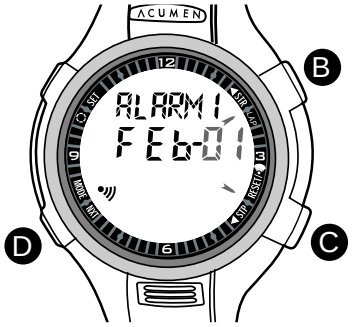
Step 2

- - Press STR/LAP Button Ⓑ or STP/RESET Button Ⓒ to adjust the value.
  - Press MODE/NXT Button Ⓓ to proceed to the next item.



Step 3

- Date (blinking)
  - Press STR/LAP Button Ⓑ or STP/RESET Button Ⓒ to adjust the value.
  - Press MODE/NXT Button Ⓓ to proceed to the next item.



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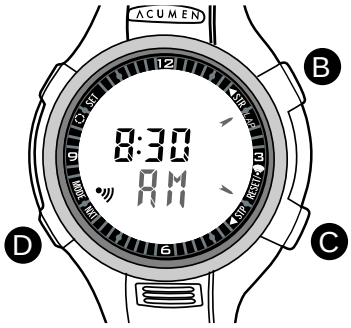
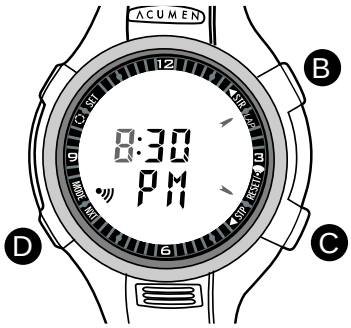


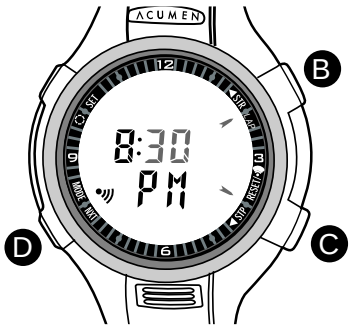
Step 4

- AM/PM (blinking)
  - Press STR/LAP Button Ⓑ or STP/RESET Button Ⓒ to select AM or PM.
  - Press MODE/NXT Button Ⓓ to proceed to the next item.



Step 5

- Hour (blinking)
  - Press STR/LAP Button Ⓑ or STP/RESET Button Ⓒ to adjust the value.
  - Press MODE/NXT Button Ⓓ to proceed to the next item.



Step 6

- Minute (blinking)
  - Press STR/LAP Button Ⓑ or STP/RESET Button Ⓒ to adjust the value.
  - Press MODE/NXT Button Ⓓ to exit and return to the Alarm1, Alarm2 or Alarm3 Display.

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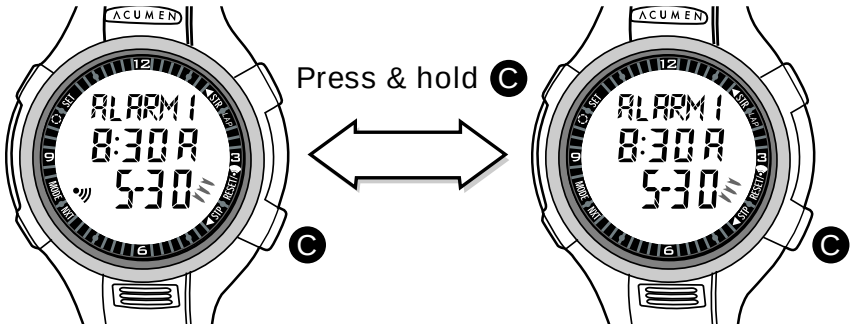
Turning the Alarm ON or OFF

From the Alarm1, Alarm2 or Alarm3 Display, press & hold STP/ RESET Button to turn the alarm on or off. ON status is indicated by a" •))" icon. See the following figures:



Alarm is turned on Alarm is turned off

Note:

1) If youíve set the Alarm Time in Setting Mode, the alarms will automatically turn to ON.
2) When the alarm sounds, press any button to turn it off.

From Alarm1, Alarm2 or Alarm3 Display, press STP/RESET Button C repeatedly to return to the Analog Time Display.

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Fluid Check™ Mode

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Fluid Check™ Mode

From the Analog Time display, press MODE/NXT Button Ⓓ one time to enter the Fluid Check™ Mode. In this mode you can turn on/off Fluid Loss function, set MET Parameter, set Drink Interval Timer and calibrating your personal MET Value.

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Getting to Know Fluid Loss

When exercising, your body regulates temperature through sweat loss, heat radiation and respiration. Dehydration reduces maximal aerobic power and endurance performance. Greater dehydration results with greater decrements in performance. The Fluid Check™ feature provides feedback to you with respect to your dehydration level. See page 93 for Fluid Check™ Monitoring Tips and Guidelines.

The Fluid Check™ feature is controlled by the stopwatch. If you have turned on the Fluid Check™ feature, the watch will show the fluid loss value in the Recall Data Mode. When in the Chrono Mode, the watch display will flash and the watch will beep each time your fluid loss equals .5% of your body weight. The higher the amount of fluid loss, the faster it will beep.

Tips:

1) If you did the Personal MET Calibration (see page 37) and take the Transmitter Belt with you during exercise, the watch will calculate the amount of your fluid loss by detecting the physiological changes of your body.

2) If you forgot take the Transmitter Belt with you, you would need to manually input Exercise Type & Intensity (see page 35).

Note: Unless the stopwatch is running, the Fluid Check™ feature will automatically turn off at the midnight (i.e. 12:00 PM).

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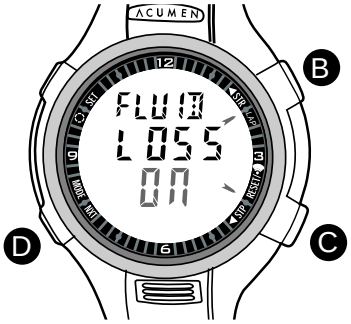
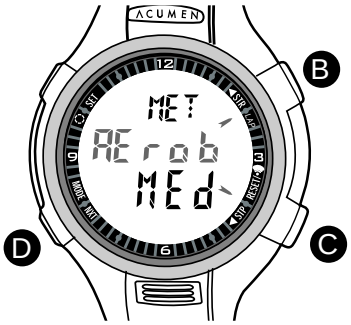
Fluid Loss Related Settings

Step 1



- Fluid Loss ON or OFF (blinking)
  - Press STR/LAP Button Ⓑ or STP/RESET Button Ⓒ to select "ON" or "OFF".
  - Press MODE/NXT Button Ⓓ to proceed to the next item if it is set to ON. If it is set to OFF, press the button will enter the Select TZ Mode.

Step 2



- Exercise Type (blinking)

  The Exercise Type & Intensity are used for calculating your fluid loss.
  - Press STR/LAP Button Ⓑ or STP/RESET Button Ⓒ to select desired Exercise Type. The Exercise Type in the watch includes:

Aerob (Aerobics)	Hike(Hiking)	Ski (Skiing)
bike (Bike)	Jog (Jogging)	CC.ski (CC. Skiing)
bowl (Bowling)	Walk (Walking)	Stair (Stairs)
Dance (Dancing)	Run (Running)	Tennis (Tennis)
Golf (Golf)	Swim (Swimming)	MET(MET Parameter)

If you do not find the particular activity in your watch, you can select "MET" to input the MET Value manually.

- Press MODE/NXT Button Ⓓ to proceed to the next item. (If select "MET" go to Step 4)

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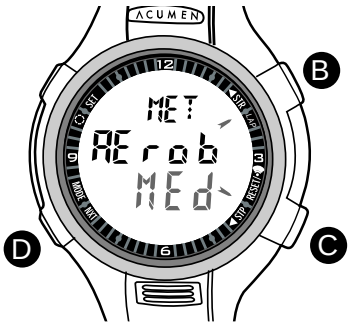
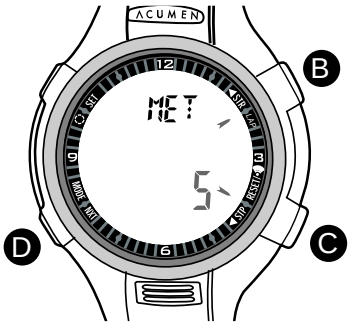
Step 3



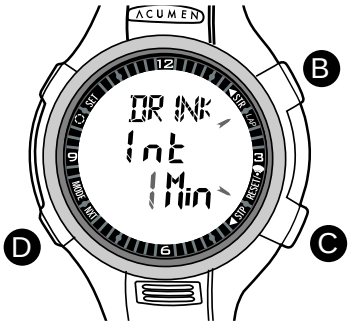
- Exercise Intensity (blinking)
  - Press STR/LAP Button Ⓑ or STP/RESET Button Ⓒ to select HI (High), MED (Medium) or LO (Low).
  - Press MODE/NXT Button Ⓓ to go to Step 5.

Step 4



- MET Parameter (blinking)
  - Press STR/LAP Button Ⓑ or STP/RESET Button Ⓒ to adjust the value. (Refer to page 92 to determine your MET Parameter).
  - Press MODE/NXT Button Ⓓ to proceed to the next item.

Step 5



- Drink Interval Timer (blinking)
  The watch will remind you to drink during exercise if the timer is set.
  - Press STR/LAP Button Ⓑ or STP/RESET Button Ⓒ to adjust the value (Range: OFF, 1 to 60minutes).
  - Press MODE/NXT Button Ⓓ to back to the "Fluid Loss ON" display.

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Personal MET Calibration (Max MET (VO2 Max) Calibration)

Your body fluid loss and calorie consumption are determined by your metabolism level. And it is very drastically from one individual to another. For better estimation, you are recommended to calibrate your MET value in the watch before exercise.

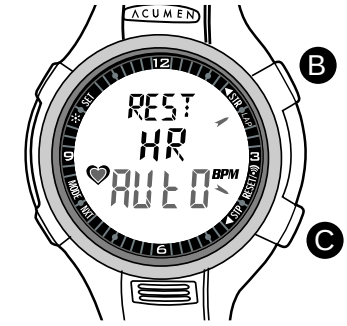
Please follow the following sequences to calibrate your MET Value:

Phase 1: Recording Your Rest Heart Rate

From the Fluid Loss ON or OFF display, press & hold SET button Ⓐ until the watch displays "MET CAL MODE" and beeps for five times to indicate entering into calibrating mode. Then it will go to next display automatically.

Step 1

- AUTO/MANU REST HR (blinking)
  You can select to enter your Rest Heart Rate by auto recording or manually input.
  - Press STR/LAP Button Ⓑ or STP/RESET Button Ⓒ to select "REST HR AUTO" or "REST HR MANU" (If select "REST HR MANU" go to step 4.)



Step 2

- Rest Heart Rate Recording
  - Press MODE/NXT Button Ⓓ to start recording. During recording, timer and current heart rate are shown on the screen. Your average rest heart rate will be displayed when the timer counting is

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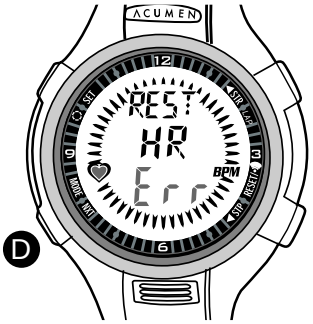
completed (i.e. a circle is displayed).



Step 3

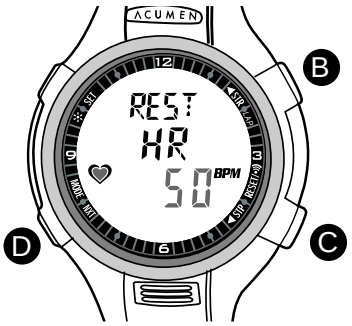
- Press MODE/NXT Button Ⓓ to proceed to Phase 2.

Note:

1) When recording the rest heart rate, press any button will have no respondence except EL Button.
2) If no heart rate signal is detected during recording, the watch will display the "REST HR ERR" and automatically return to HR input Manual/Auto Display.

Tips:
During recording, you should relax yourself and bring your body down to a comfort rest by taking deep slow breathes.

Step 4



- Rest Heart Rate (blinking)
  - Press STR/LAP Button Ⓑ or STP/Reset Button Ⓒ to adjust the value.
  - Press MODE/NXT Button Ⓓ to proceed to Phase 2.

Phase 2: 1600M or 1.0 Mile Assessment

This assessment allow the watch to find out the physiological changes of your body at a normal speed. You will need to find a standard 400M field track or 1 Mile distance to finish the assessment.

Note: Before assessment, please make sure the Heart Rate Transmitter is attached on your chest properly.

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Step 1

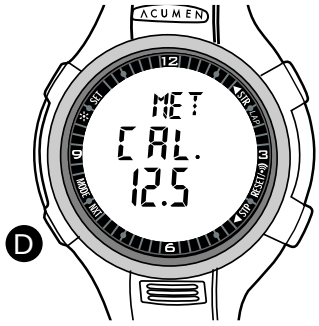
- M or Mi (blinking)
  - Press STR/LAP Button Ⓑ or STP/RESET Button Ⓒ to select 1600 M or 1 Mile.
  - Press MODE/NXT Button Ⓓ to proceed to next step.

Step 2

- Stopwatch (displayed)
  - Press STR/LAP Button Ⓑ to start and run.
  - Press STP/Reset Button Ⓒ to stop.

Step 3

- When Stopped the Stopwatch
  - Press MODE/NXT Button Ⓓ to display MET value.



Note:

If no heart rate is detected, the watch displays the "MET CAL. ERR", press MODE/NXT button Ⓓ will exit Calibrating Mode and back to "FLUID LOSS ON" display.

From the Fluid Check™ Mode, press MODE/NXT Button Ⓓ repeatedly to return to the Analog Time Display.

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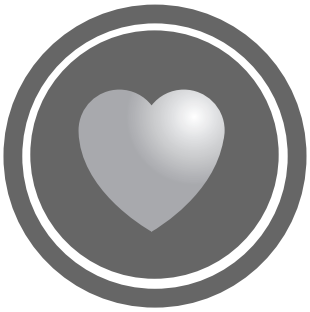

Select Target Zone (TZ) Mode

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Select Target Zone (TZ) Mode

Freezes for two seconds

From the Analog Time Display, press MODE/NXT Button Ⓓ two times to enter the Select TZ Mode. There are three Heart Rate Target Zones in the watch. In this mode, you can select Heart Rate Training Zone, Set Target Zone Limit, Out of Target Zone alarm, and Heart Rate Sampling Interval Time.

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Getting to know the three Target Zones (TZ)

In order to benefit the most from your workout, you need to become familiar with your Heart Rate Target Zone. For most people, as your heart rate exceeds the upper limit, your body begins to become anaerobic and produce acids. By working within the correct range, you will achieve your fitness goals and strengthen your cardiovascular system in less time.

Zone 1 (Fat Burning Zone, 55-65%) -This range is recommended for those who haven't worked out in a long time, are trying to lose weight, are at a high risk for heart problems or if you're just not feeling 100% one day.

Zone 2 (The Aerobic Zone, 65%-85%) - This range is recommended for those in good physical condition who have been exercising on a consistent basis for an extended period of time. Exercising at this range helps improve your fitness level and prevent injury caused from overtraining.

Zone 3 (The Anaerobic Zone, 85% - 95%) This range is used only for those in extremely good physical condition during races or training for competition. It is typically used for interval training to help improve or measure endurance levels.

Select Target Zone Before Exercise

Select a desired Target Zone before exercise. The watch will record the time you are In, Below and Above this Zone, the Average Heart Rate, and will give both visual & audible indications when you are out of the Zone during exercise.

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In the Select TZ Mode:

- Press STR/LAP Button Ⓑ repeatedly to circle around the Zone2, Zone3 & Zone1.
- Press SET Button Ⓐ repeatedly to toggle Maximum heart rate display in BPM (beats per minute) and percentage.

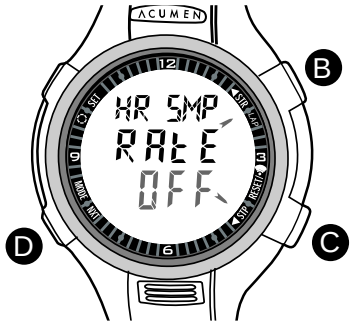
Setting the Heart Rate Limits for Each Zone

Select your desired Target Zone, press & hold SET Button Ⓐ to enter the setting mode.

Note: To enter the Setting Mode, the stopwatch must be reset to zero.

Step 1

- Heart Rate Sampling Interval Time (blinking)
  The watch will automatically store the heart rate readings into memory based upon the desired interval for downloading to your PC after your exercise.
  - Press STR/LAP Button Ⓑ or STP/RESET Button Ⓒ to adjust the value. (Range: OFF, 5, 10, 30, 60 seconds and 5 minutes)
  - Press MODE/NXT Button Ⓓ to proceed to the next item.



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Step 2

- Upper Limit (blinking)
  - Press STR/LAP Button Ⓑ or STP/RESET Button Ⓒ to adjust the value.
  - Press MODE/NXT Button Ⓓ to proceed to the next item.

Step 3

- Lower Limit (blinking)
  - Press STR/LAP Button Ⓑ or STP/RESET Button Ⓒ to adjust the value.
  - Press MODE/NXT Button Ⓓ to exit and return to the Heart Rate Mode.

Note: Press SET Button Ⓐ to toggle between the heart rate limit in BPM or Percentage of your Maximum Heart Rate in the Setting Mode.

Setting the Target Zone Alarm

If you set the Target Zone Alarm to ON, the watch will beep when you are above or below the selected Target Zone. From the Select TZ Mode, press & hold STP/RESET Button Ⓒ to set the Target Zone Alarm to ON or OFF. ON is indicated by the "•))" icon.

From the Select TZ Mode, press MODE/NXT Button Ⓓ four times to return to the Analog Time Display.

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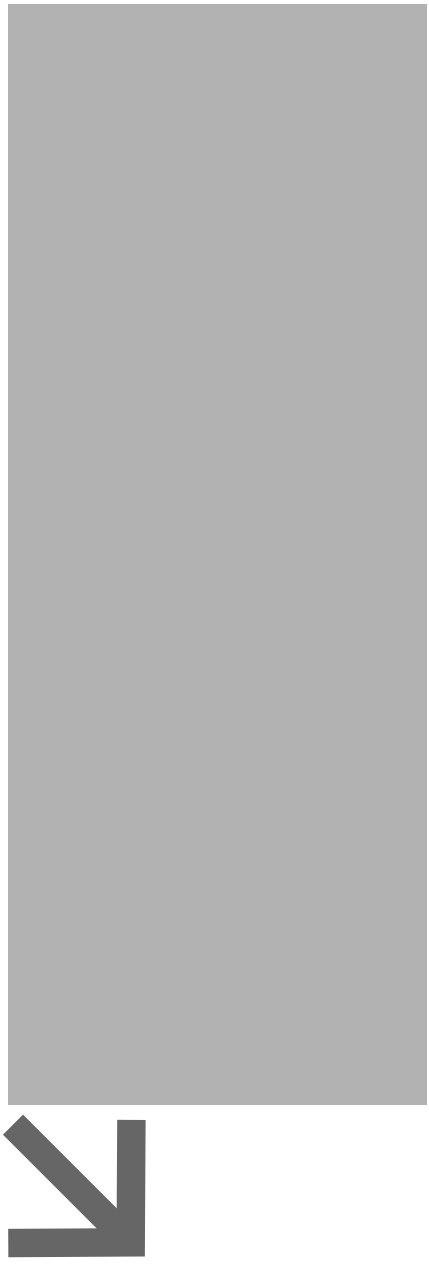
Interval Timer Mode



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Interval Timer Mode

From the Analog Time Display press MODE/NXT Button Ⓓ three times to enter the Interval Timer Mode. This mode is used to quickly set the Interval Timers.

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Interval Timer is used to signal time elapsed during the exercise. The watch includes two Interval Timers and it runs in sequence. If it is set to ON, it will be displayed in the Chrono Mode replacing the stopwatch.

Interval Timers are commonly used to time individual segments during interval or sprint training, or, for timing a pacing goal for segment, etc. (For example, if you want to exercise for one hour with 2 minute breaks every 10 minutes, you would set Timer 1 to 10 minutes, Timer 2 to 2 minutes and the number of cycles to 6.).

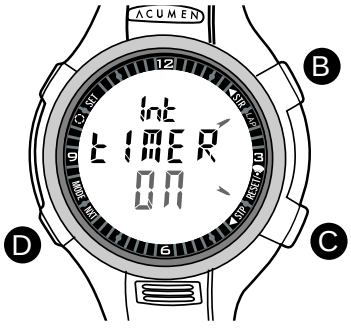
Note: MUST STOP TIMER WHILE IN CHRONO MODE, in order to start Interval Timer during the same session of exercise.

Setting the Interval Timer

From the Interval Timer Mode, if the Interval Timer has been set to ON, press & hold SET Button Ⓐ to enter the setting mode. If it has been set to OFF, the "OFF" blinking means it is ready to set.

Step 1

- Interval Timer ON/OFF (blinking)
  - Press STR/LAP Button Ⓑ or STP/RESET Button Ⓒ to select ON or OFF.
  - Press MODE/NXT Button Ⓓ to proceed to the next item.



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Step 2

- Number of Cycle (blinking)
  - Press STR/LAP Button Ⓑ or STP/RESET Button Ⓒ to adjust the value (range, 1~9 and C for continuously).
  - Press MODE/NXT Button Ⓓ to proceed to the next item.

Step 3

- Time for Timer1 (blinking)
  - Press STR/LAP Button Ⓑ or STP/RESET Button Ⓒ to adjust the value (range, 5 - 59 seconds or 60 minutes).
  - Press MODE/NXT Button Ⓓ to proceed to the next item.

Step 4

- Time for Timer2 (blinking)
  - Press STR/LAP Button Ⓑ or STP/RESET Button Ⓒ to adjust the value (range, 5 - 59 seconds or 60 minutes). If the interval timer is set less 1 minute, the "sec" on the display will flash for 1 second for indication.
  - Press MODE/NXT Button Ⓓ to exit and return to the Interval Timer Mode.

From the Interval Timer Mode, press MODE/NXT Button Ⓓ three times to return to the Analog Time Display.

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Chrono Mode

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Chrono Mode

Freezes for two seconds

From the Analog Time Display press MODE/NXT Button Ⓓ four times to enter the Chrono Mode. In this mode, you can activate/ deactivate/ reset Stopwatch, Record and Store Exercise Data, activate/ deactivate Out of Target Zone Alarm.

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Heart Rate display

When the watch detects your heart rate, it will be displayed on the lower screen in the Chrono Mode as followed:

Blinking "♡" displayed and flashing means that the heart rate receiver is activated.

Blinking "♥" displayed and flashing means that heart rate signal is being received.

Blinking " - " means that there is an error in the heart rate signal being received.

"TZ" and Heart Rate reading (displayed in BPM or Percentage) means your heart rate is in the target zone.

Blinking "TZ▼" and heart rate reading (displayed in BPM or Percentage) flashing means your heart rate is below the target zone.

Blinking "▲TZ" and heart rate reading (displayed in BPM or Percentage) flashing means your heart rate is above the target zone.

Tips:

When the stopwatch is running, you can toggle to display your heart rate in BPM or Percentage by pressing SET Button Ⓐ in the Chrono Mode.

Start Your Exercise

- From the Chrono Mode, press STR/LAP Button Ⓑ to activate the stopwatch and start measuring the exercise data.

- Press STP/RESET Button Ⓒ to stop / pause the stopwatch, press STR/LAP Button Ⓑ again to continue the exercise. When the stopwatch is stopped, it displays the total time for the current session.

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Record a Lap

- While the stopwatch is running, press STR/LAP Button Ⓑ to record a lap and start the new lap. The watch will freeze the display of the first lap for 7 seconds before displaying the new lap.

- If you want to re-select the Heart Rate Training Zone or re-set the Interval Timer before the next lap, stop the present lap by pressing STP/RESET Button Ⓒ, then set the watch. When you return to the Chrono Mode, (it shows the total exercise time) you can start the stopwatch beginning with a new lap.

Record a Session

- When you finished an exercise session, stop the stopwatch, then press & hold STP/RESET Button Ⓒ in the Chrono Mode to store all recordings into watch memory (at the same time the stopwatch is reset to zero). That will enable you to review all exercise data in the Recall Data Mode.

Note:

The watch has 99 laps display. When it goes over 99 laps, it will start from lap 1 again, and it will keep 1 session and the last 50 laps in memory.

Start the Interval Timer

If the interval timer is set to ON, it replaces the stopwatch in the Chrono Mode. When the interval timer finishes the watch produces a long beep for indication. See the below figure:

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- To start the Interval Timer by pressing STR/LAP Button Ⓑ. The watch will automatically record the data of each interval timer as a lap.
- To stop/pause the Interval Timer by pressing STP/RESET Button Ⓒ, the total elapsed time is displayed.
- To re-set the Interval Timer, you need press STP/RESET Button Ⓒ to stop it with storing the data as a lap, then press MODE/NXT Button Ⓓ, repeatedly to go into the Interval Timer Mode and set it.
- When all count down timers are finished, the Interval Timer will automatically turn off. To immediately quit and turn off the Interval Timer, stop the stopwatch, then press & hold STP/RESET Button Ⓒ.

Note: When the Interval Timer is turned on, you could not record the lap by pressing STR/LAP Button Ⓑ.

Alarms During the Exercise

1. Out of Zone Alarm

The watch will beep constantly if your heart rate is above or below the selected Target Zone. This is to remind you to speed up or slow down.

- When the stopwatch is running, press & hold STP/RESET Button Ⓒ to activate/deactivate the Target Zone alarm.

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OR

- When the stopwatch is stopped and has already reset to zero, press & hold STP/RESET Button Ⓒ to activate/deactivate the Target Zone Alarm.

2. In-Zone-Goal Countdown Timer Alarm

You can set a goal time for being in your Target Zone. This In-Zone-Goal Countdown Timer is set while in the Recall Data Mode or the Program Mode. It can be set from 5 to 60 minutes. This value is set by pressing STR/LAP Buttons Ⓑ or STP/RESET Buttons Ⓒ. If it is set to ON, the "⁚⁚⁚⁚⁚⁚⁚⁚" icon is displayed in the Chrono Mode as the following figure:

In-Zone-Goal Count Down Timer Segments

The "⁚⁚⁚⁚⁚⁚⁚⁚" represents time segments. Each blinking segment means 1/9 of your goal time has been reached. When the total goal time is reached, the watch will give four beeps and the display will flash your goal time for 10 seconds. (You can view the In-Zone-Goal Count Down Timer display in the Recall Data Mode).

3. Drink Interval Timer Alarm

The watch will remind you to drink during exercise by giving a long beep and flash with the amount of fluid loss for 10 seconds. Note: You must set the Drink Interval Timer to ON and have the stopwatch running. (You can set the Drink Interval Timer under the Fluid Check™ Mode refer to page 36.)

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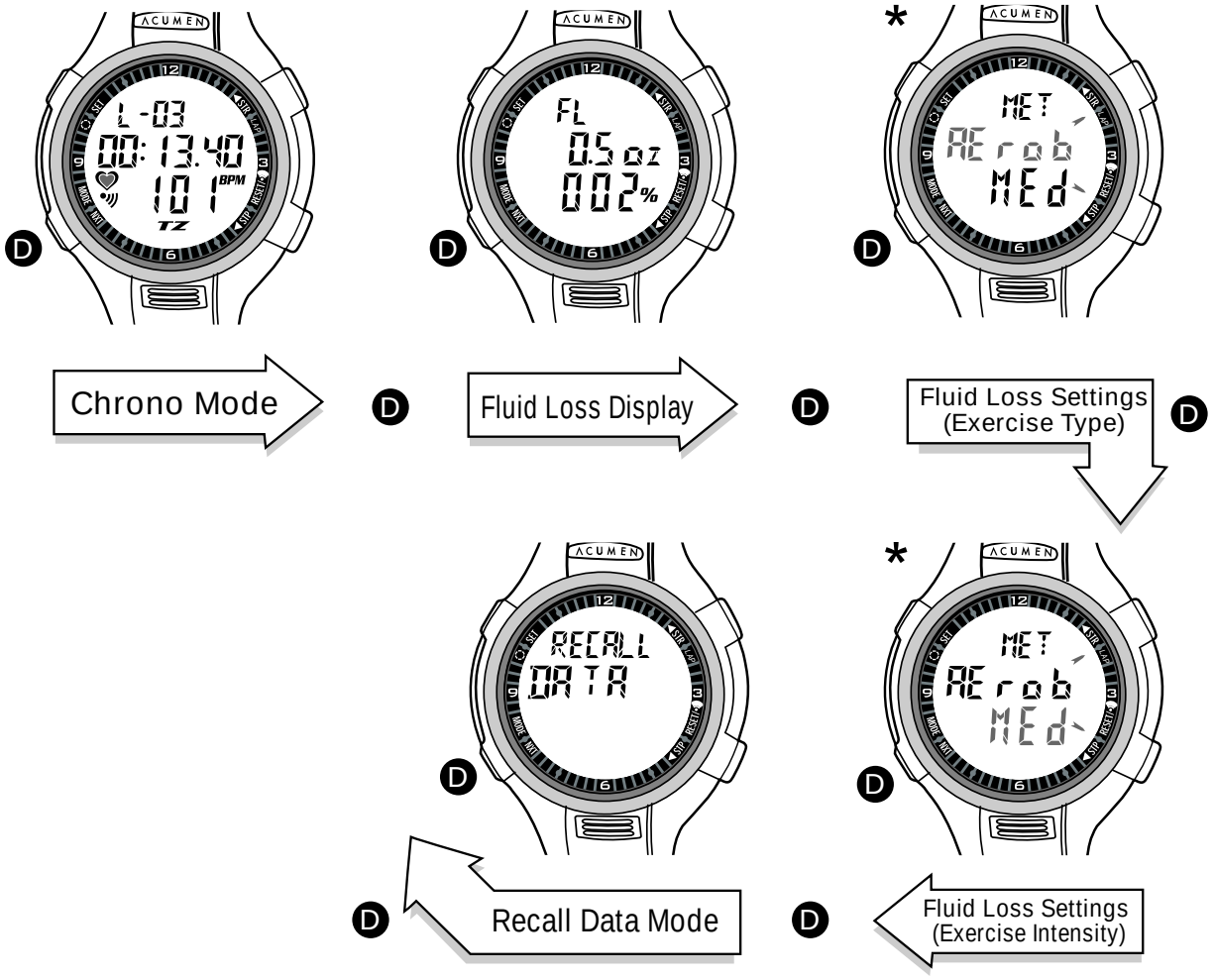
Other Operations During the Exercise

1. When a Lap is going on and the stopwatch is running:

- Press MODE/NXT Button Ⓓ repeatedly will circle around the Chrono Mode, Fluid Loss Display, * Fluid Loss Settings and Recall Data Mode. See the figures below:



(* Fluid Loss Settings only shown if you have not calibrate the MET value in the watch or no heart rate signal is detected by the watch.)

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If you do not have a calibrated MET value or put on a HR transmitter, the watch will only use your pre-set MET value or our default value (Aerobic with Medium Intensity). Please make sure to re-select your exercise type and intensity every time with the procedure mentioned above.

However, if you have already calibrated your own MET value and put on a HR transmitter, the displays of Fluid Loss Setting (Exercise Type and Intensity) will automatically be turned off as the watch will calculate the best MET value for you.

2. When a Lap is finished and the stopwatch is stopped:
- Press MODE/NXT Button ❶ repeatedly to circle around all modes mentioned before, plus the Select TZ Mode and Interval Timer Mode.. You can re-select Target Zone or re-set Interval Timer before start a new lap (if you did that, when you re-start the stopwatch, it begins with a new lap).

The Interval Timers are used for timing your exercise under a selected Target Zone. If you turned on the Interval Timer, you could not re-select the Target Zone and the Select TZ Mode would not show. The Select TZ Mode is displayed until the Interval Timers are finished or turned off.

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3. When a session is finished and stored the exercise data (the stopwatch is reset to zero):
That means youíve exit exercise section of the monitor and all the Modes can be shown.

From the Chrono Mode, press MODE/NXT Button Ⓓ two times to return to the Analog Time Display.

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Recall Data Mode

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Recall Data Mode

Freezes for two seconds

From the Analog Time Display press MODE/NXT Button Ⓓ five times to enter the Recall Data Mode. In this mode you can review and delete the exercise data, and quick set the watch.

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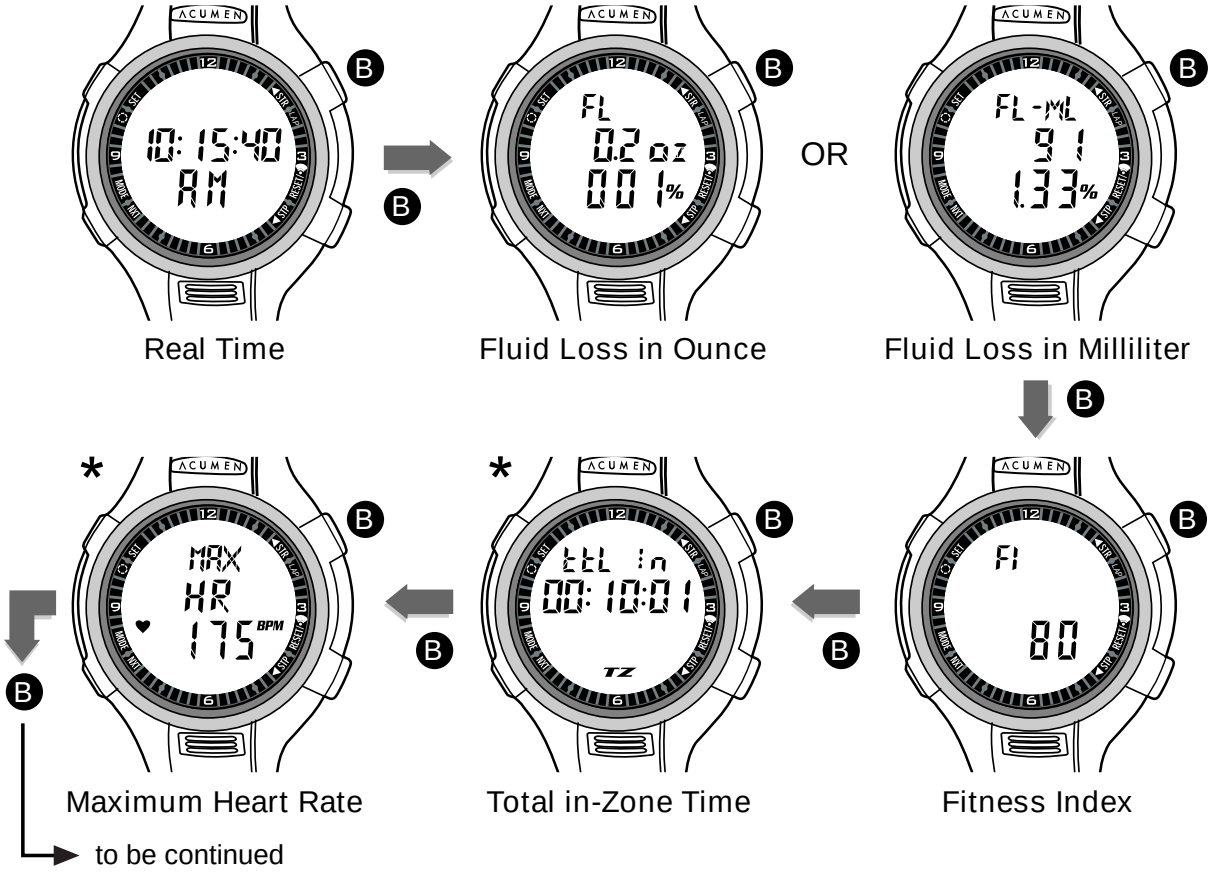
Review Data During the Exercise

While the stopwatch is running or paused, enter the Recall Data Mode and press STR/LAP Button Ⓑ to view your exercise data as followed:



(* The displays are not shown if no heart rate signal is detected.)

Note:

- If no button is pressed after entering the Recall Data Mode, the watch will display the real time for 3 seconds and back to Chrono Mode automatically.
- During reviewing the data, at any time press STP/RESET Button Ⓒ or MODE/NXT Button Ⓓ to quit and back to Chrono Mode.

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Total Time & Average Heart Rate

Time & Average Heart Rate of the Last Lap (for Current Zone)

Time & Average Heart Rate of the First Lap (for Current Zone)

You can quickly quit the Recall Data Mode and go to the Chrono Mode by pressing STP/RESET Button Ⓒ.

Note:

- The watch has 99 laps display. When it goes over 99 laps, it will start from lap 1 again, and it will keep 1 session and the last 50 laps in memory.
- If the In-Zone Timer is zero, the In-Zone Time frame will not be displayed.

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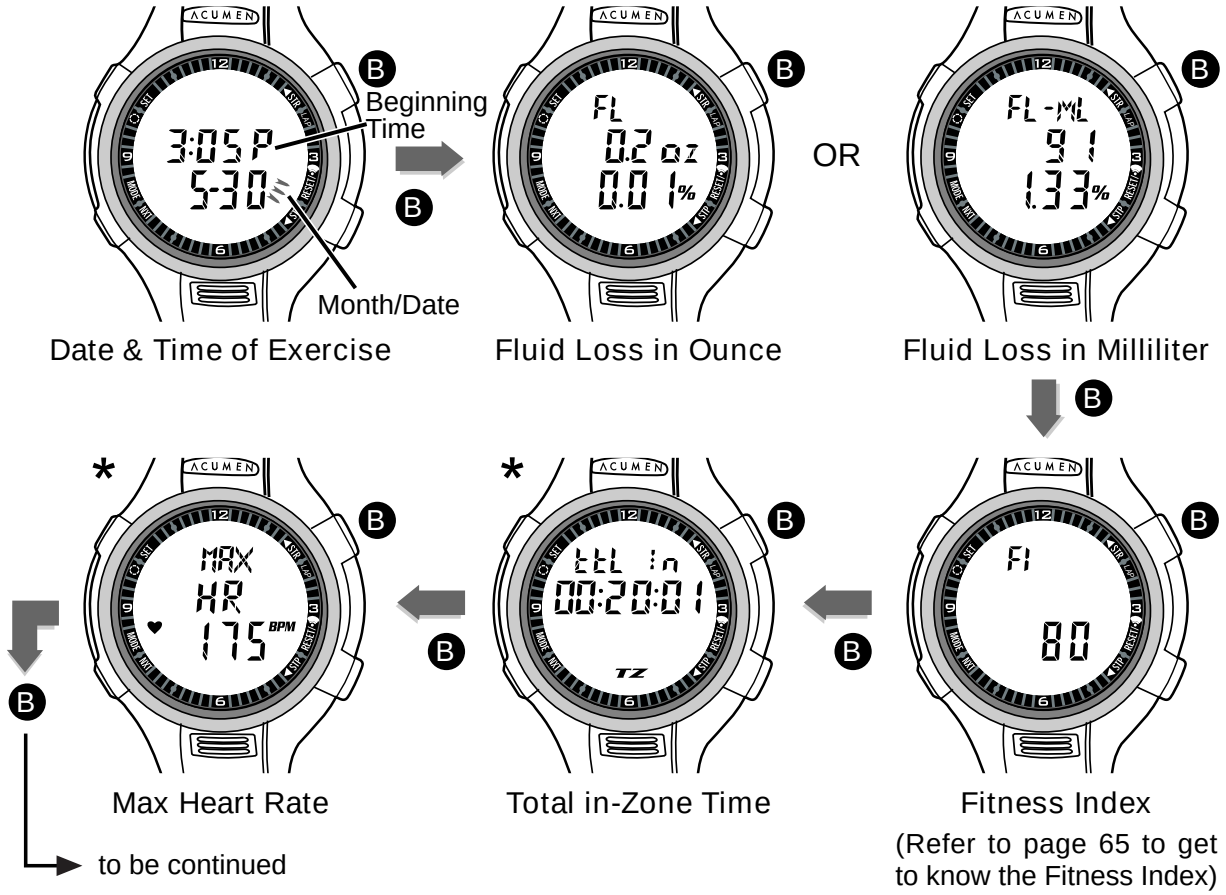
Review Data After the Exercise

You can review your exercise data after the stopwatch is stopped and data is stored into memory. The displaying sequence is as followed:

- Press STR/LAP Button Ⓑ repeatedly to change the displays.
- Press STP/RESET Button Ⓒ to quit the Recall Data Mode and go to the Fluid Check™ Mode.


Beginning Time
Month/Date
Date & Time of Exercise
Fluid Loss in Ounce
OR
Fluid Loss in Milliliter
Fitness Index
(Refer to page 65 to get to know the Fitness Index)
Total in-Zone Time
Max Heart Rate
to be continued
(* The displays are not shown if no heart rate signal is detected.)

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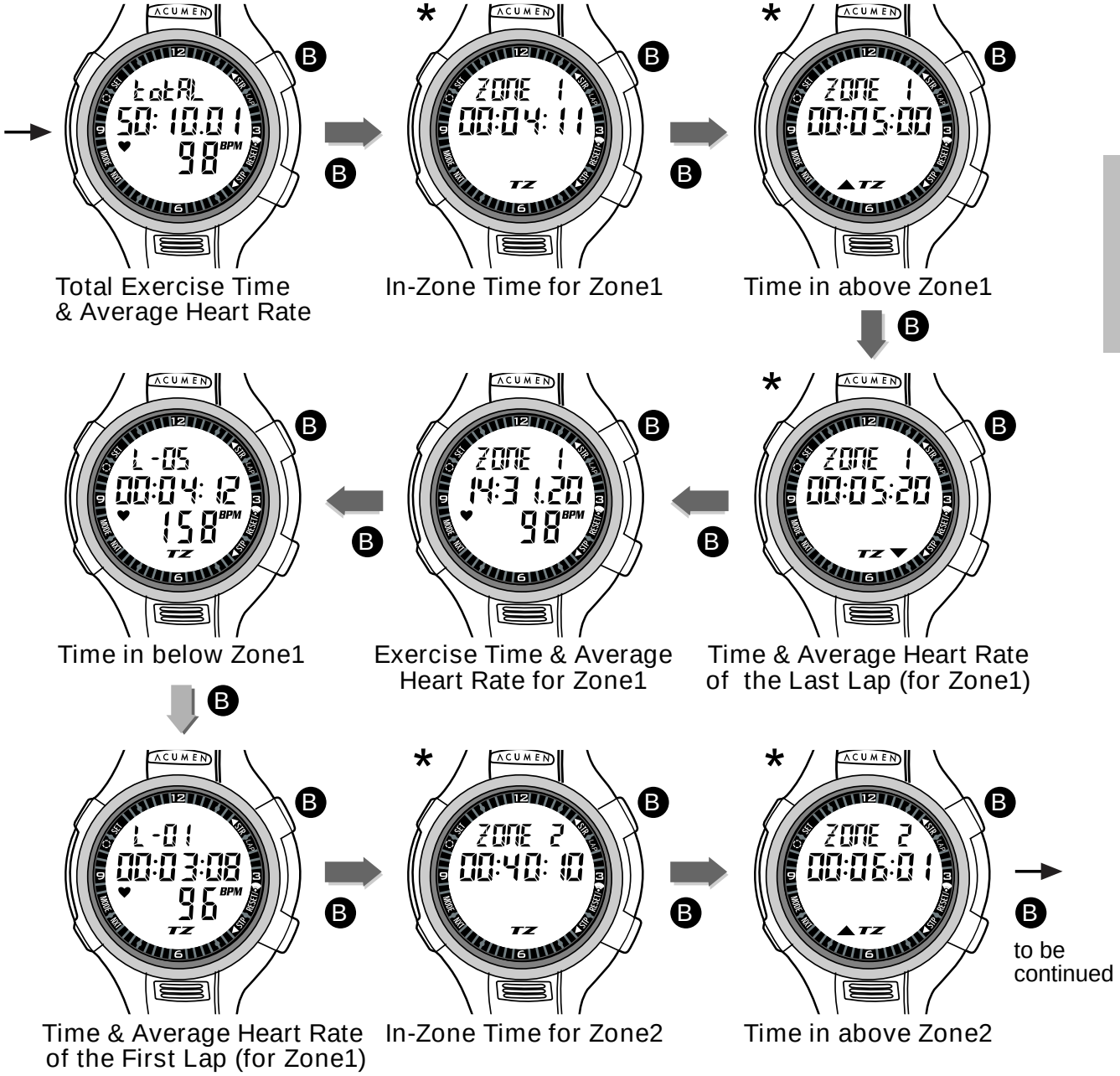

(* The displays are not shown if no heart rate signal is detected.)

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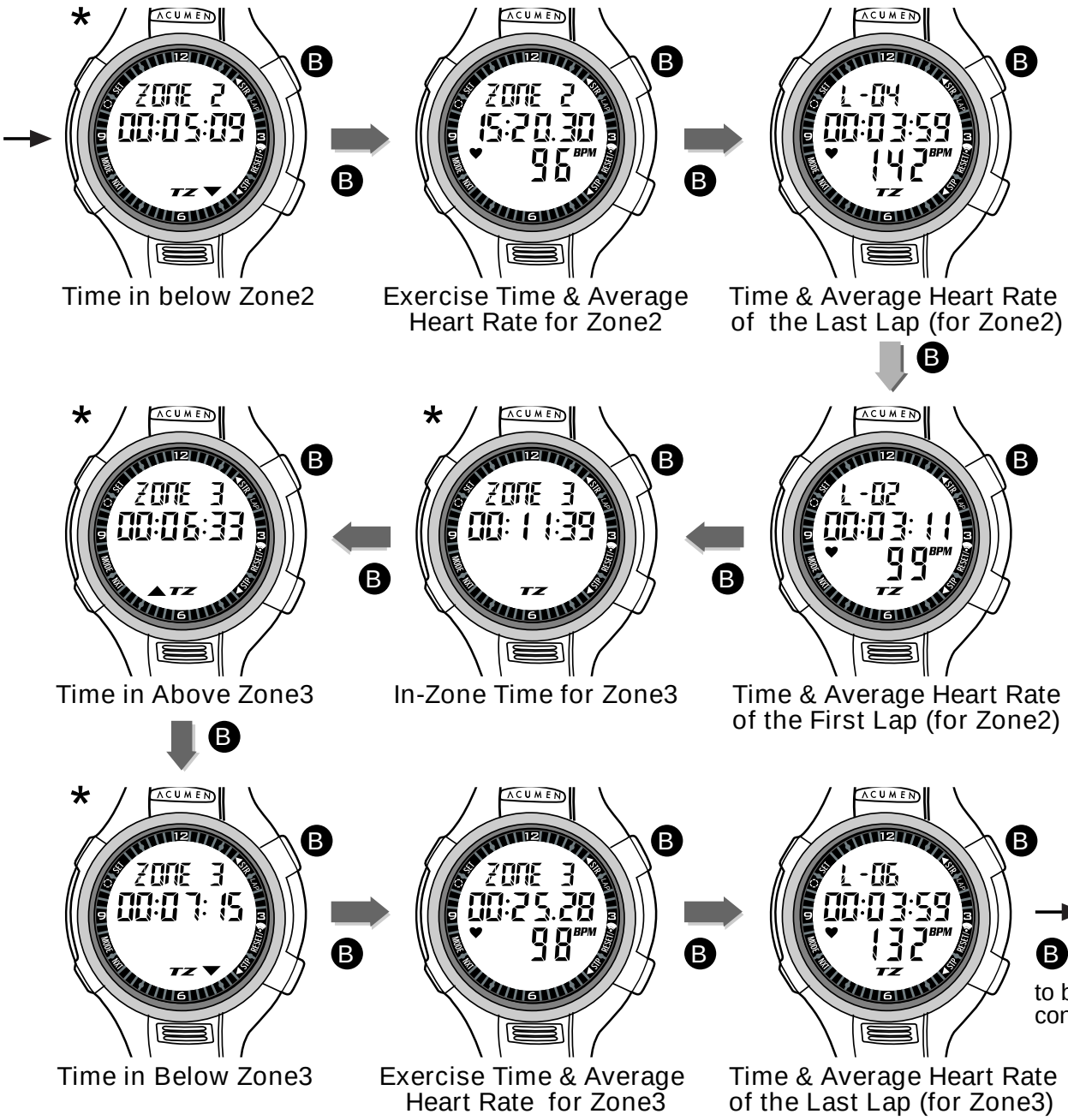

(* The displays are not shown if no heart rate signal is detected.)

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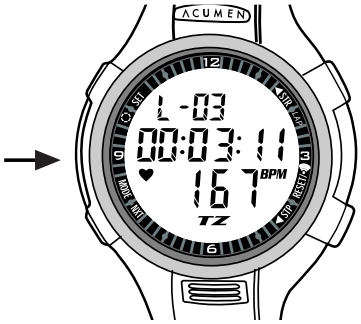

Time & Average Heart Rate
of the First Lap (for Zone3)

Note:

Your Fitness Index is displayed in the Recall Data Mode (see page 62) after stopping the stopwatch. This feature is used to measure your fitness level by monitoring how quick your heart rate starts to come down in one minute, the bigger this value, the better your recovery rate. (You should attach the belt to your chest for this feature to work.)

Fitness Index Level	Grade
0~20	Poor
21~40	Fair
41~60	OK
61~80	Good
81~100	Excellent

Quick Reset Stopwatch & Entering Basic Settings

At any time from the real time display in Recall Data Mode, press & hold SET Button Ⓐ will enter the Reset Stopwatch Mode and the "RESET" is displayed for indication. Press STR/LAP Button Ⓑ will reset the stopwatch, store the current exercise data and enter the Basic Settings Mode. (If no button is pressed for 3 seconds it will exit Reset Stopwatch Mode automatically.)

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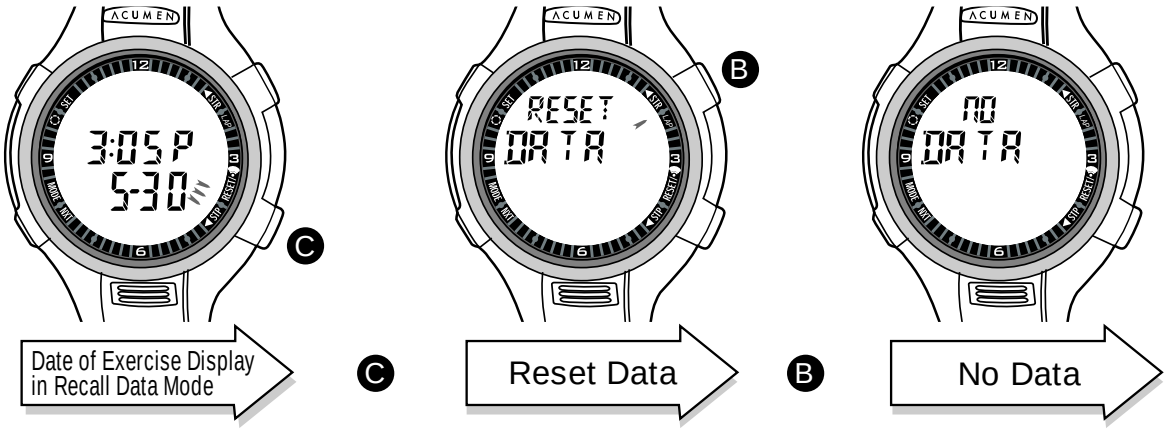
Clear the Memory

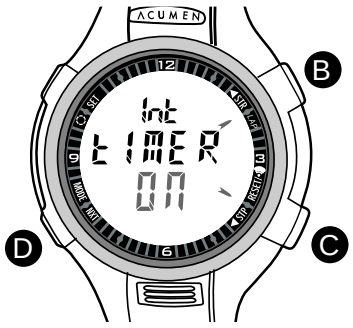
You can clear the stored exercise data in the Recall Data Mode. Press & hold STP/RESET Button Ⓒ until the watch sounds two beeps and the "RESET DATA" appears. Press STR/LAP Button Ⓑ which is indicated by an arrow to clear all the exercise data. See the figures below:



Basic Settings for Exercise

From the Recall Data Mode, after clearing the memory, press & hold SET Button Ⓐ to enter the setting mode.

Step 1



- Interval Timer ON/OFF (blinking)
  - Press STR/LAP Button Ⓑ or STP/RESET Button Ⓒ to select ON or OFF.
  - Press MODE/NXT Button Ⓓ to proceed to the next item.

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Step 2

- Cycle (blinking)
  - Press STR/LAP Button Ⓑ or STP/RESET Button Ⓒ to adjust the value. (range, 1~9 and C i.e. continuously)
  - Press MODE/NXT Button Ⓓ to proceed to the next item.

Step 3

- Time for Timer1 (blinking)
  - Press STR/LAP Button Ⓑ or STP/RESET Button Ⓒ to adjust the value. (Range, 5 - 59 seconds or 60 minutes)
  - Press MODE/NXT Button Ⓓ to proceed to the next item.

Step 4

- Time for Timer2 (blinking)
  - Press STR/LAP Button Ⓑ or STP/RESET Button Ⓒ to adjust the value (range, 5 - 59seconds or 60 minutes). If set the interval timer less 1 minute, it will first flashing display the "sec" (i.e. second) for 1 second for indication.
  - Press MODE/NXT Button Ⓓ to proceed to the next item.

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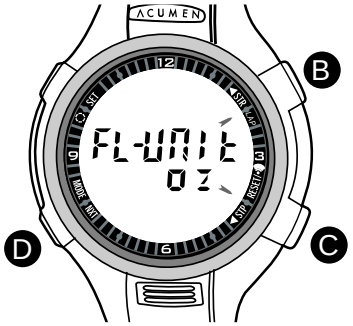
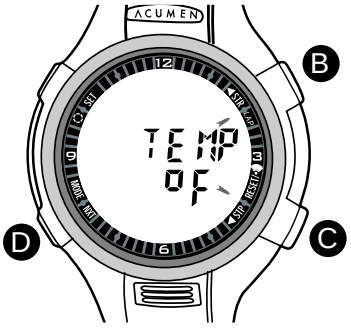
Step 5

- In- Zone Goal Count Down Timer (blinking)
  - Press STR/LAP Button Ⓑ or STP/RESET Button Ⓒ to adjust the value (Range: OFF or 5~60 minutes).
  - Press MODE/NXT Button Ⓓ to proceed to the next item.

Step 6

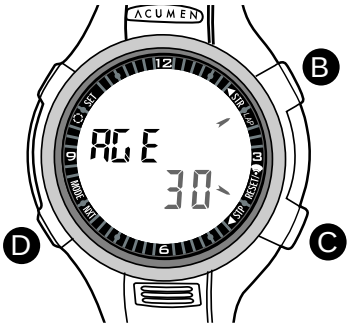
- Fluid Loss Unit (blinking)
  - Press STR/LAP Button Ⓑ or STP/RESET Button Ⓒ to select OZ (Ounce) or ML (Milliliter).
  - Press MODE/NXT Button Ⓓ to proceed to the next item.





Step 7

- Temperature Unit (blinking)
  - Press STR/LAP Button Ⓑ or STP/RESET Button Ⓒ to select °F (Fahrenheit) or °C (Celsius).
  - Press MODE/NXT Button Ⓓ to proceed to the next item.



Step 8

- Age (blinking)
  - Press STR/LAP Button Ⓑ or STP/RESET Button Ⓒ to adjust the value.
  - Press MODE/NXT Button Ⓓ to proceed to the next item.

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Step 9

- Weight Unit (blinking)
  - Press STR/LAP Button Ⓑ or STP/RESET Button Ⓒ to select KG or Lbs.
  - Press MODE/NXT Button Ⓓ to proceed to the next item.

Step 10

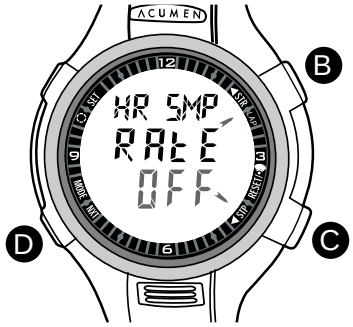
- Weight Value (blinking)
  - Press STR/LAP Button Ⓑ or STP/RESET Button Ⓒ to adjust the value.
  - Press MODE/NXT Button Ⓓ to proceed to the next item.

Step 11

- Maximum Heart Rate (blinking)
  - Press STR/LAP Button Ⓑ or STP/RESET Button Ⓒ to adjust the value.
  - Press MODE/NXT Button Ⓓ to proceed to the next item.

Step 12

- Heart Rate Sampling Interval Time (blinking)
  - Press STR/LAP Button Ⓑ or STP/RESET Button Ⓒ to adjust the value.
  - Press MODE/NXT Button Ⓓ to proceed to the next item.



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Step 13

- Upper Limit for Zone 1 (blinking)
  - Press STR/LAP Button Ⓑ or STP/RESET Button Ⓒ to adjust the value.
  - Press MODE/NXT Button Ⓓ to proceed to the next item.

Step 14

- Lower Limit for Zone 1 (blinking)
  - Press STR/LAP Button Ⓑ or STP/RESET Button Ⓒ to adjust the value.
  - Press MODE/NXT Button Ⓓ to proceed to the next item.

Step 15

- Upper Limit for Zone 2 (blinking)
  - Press STR/LAP Button Ⓑ or STP/RESET Button Ⓒ to adjust the value.
  - Press MODE/NXT Button Ⓓ to proceed to the next item.

Step 16

- Lower Limit for Zone 2 (blinking)
  - Press STR/LAP Button Ⓑ or STP/RESET Button Ⓒ to adjust the value.
  - Press MODE/NXT Button Ⓓ to proceed to the next item.

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Step 17

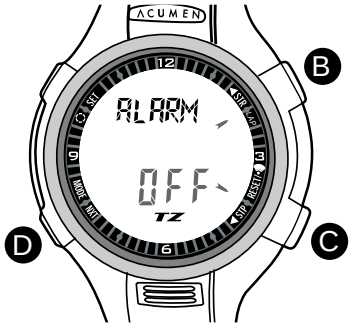
- Upper Limit for Zone 3 (blinking)
  - Press STR/LAP Button Ⓑ or STP/RESET Button Ⓒ to adjust the value.
  - Press MODE/NXT Button Ⓓ to proceed to the next item.

Step 18

- Lower Limit for Zone 3 (blinking)
  - Press STR/LAP Button Ⓑ or STP/RESET Button Ⓒ to adjust the value.
  - Press MODE/NXT Button Ⓓ to proceed to the next item.

Step 19

- Out of Zone Alarm (blinking)
  - Press STR/LAP Button Ⓑ or STP/RESET Button Ⓒ to set the alarm to ON or OFF.
  - Press MODE/NXT Button Ⓓ to exit and return to the Recall Data Mode.



Note: Press and hold SET button Ⓐ at any time in the Setting Mode to exit the Setting Mode.

From the Recall Data Mode, press MODE/NXT Button Ⓓ one time to return to the Analog Time Display.

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Program Mode

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Program Mode

From the Analog Time Display press & hold SET Button Ⓐ to enter the Program Mode. This mode includes most of the settings in the watch.

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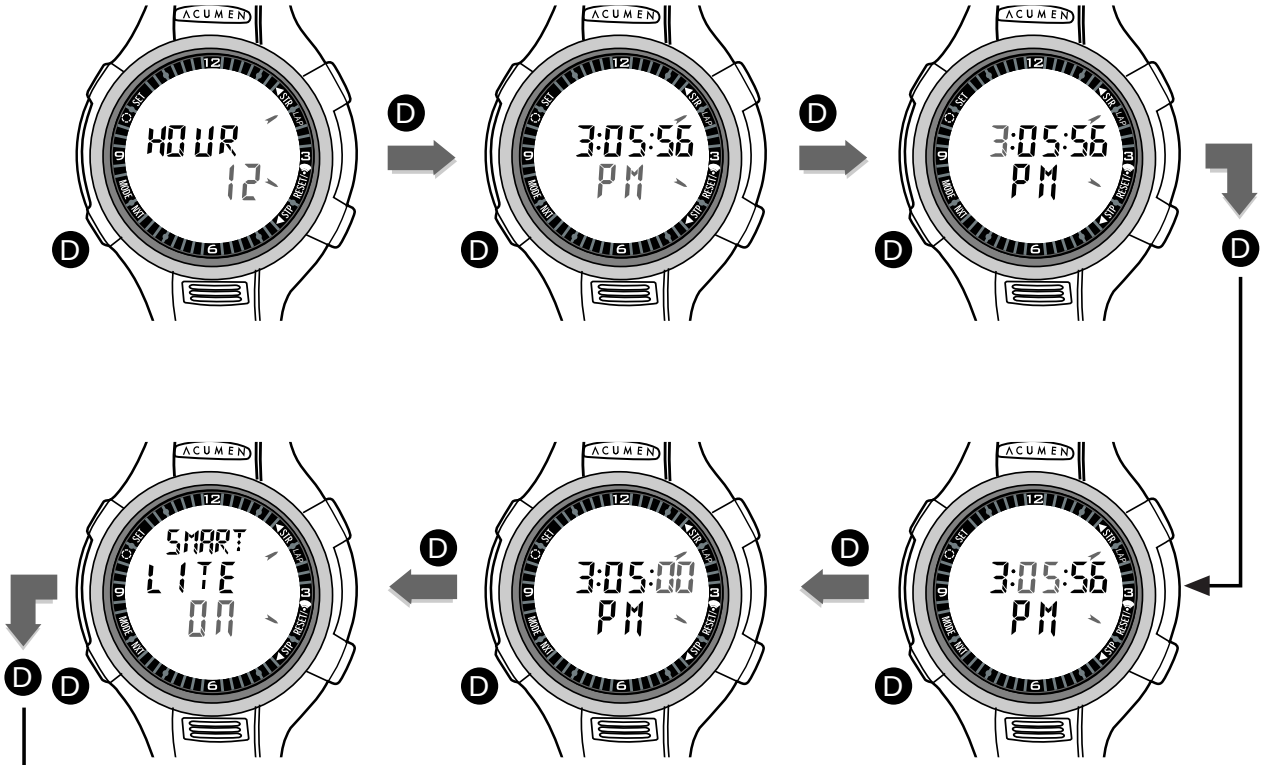
To set the watch according to the following sequence:

- Press MODE/NXT Button Ⓓ to proceed to the next item.
- Press STR/LAP Button Ⓑ or STP/RESET Button Ⓒ to adjust the value.
- Press SET Button Ⓐ to select heart rate limit in BPM or percent of your maximum heart rate.



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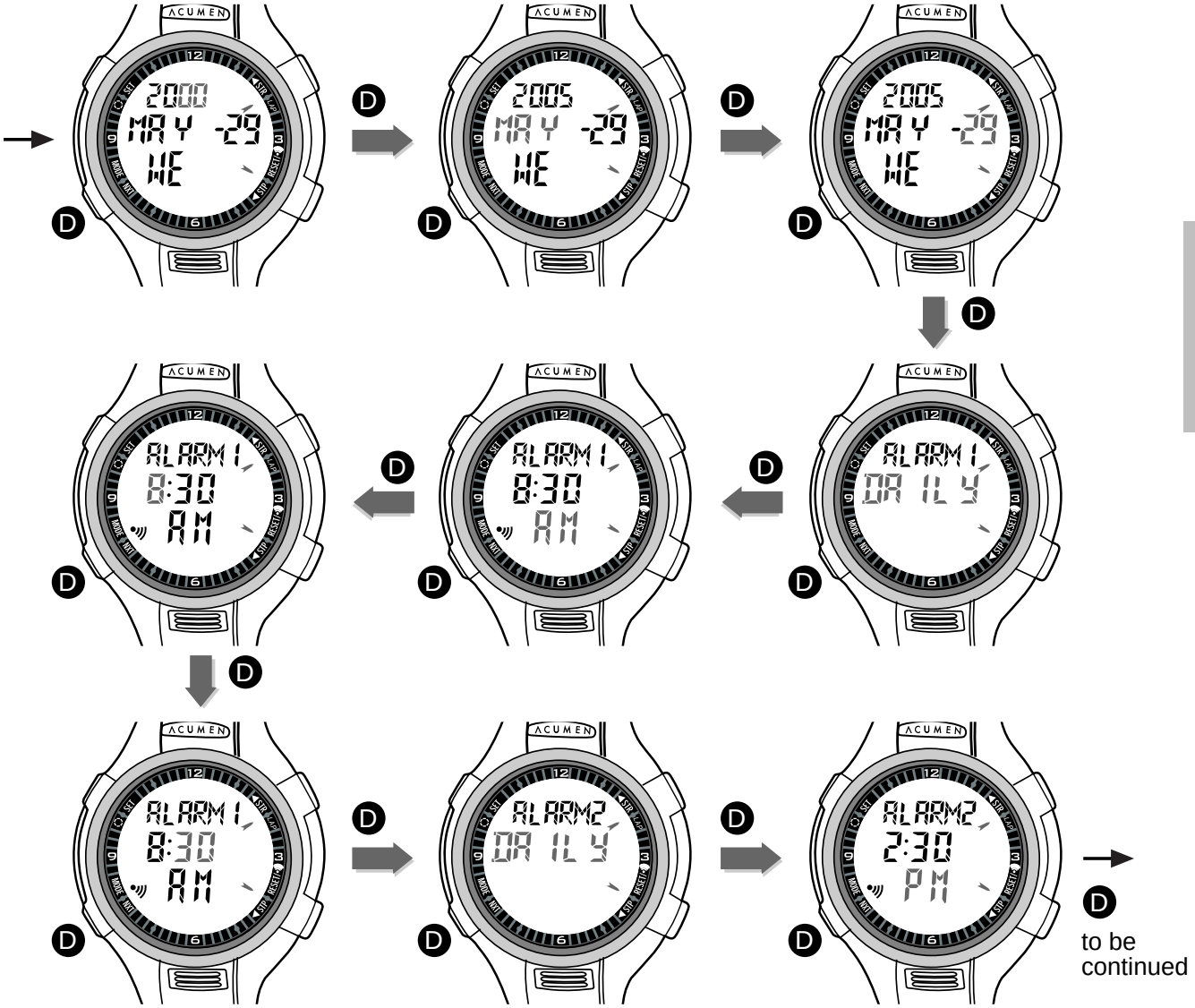

Note:

Press STR/LAP Button Ⓑ or STP/RESET Button Ⓒ to adjust the value.
Press SET Button Ⓐ to select heart rate limit in BPM or percent of your maximum heart rate.

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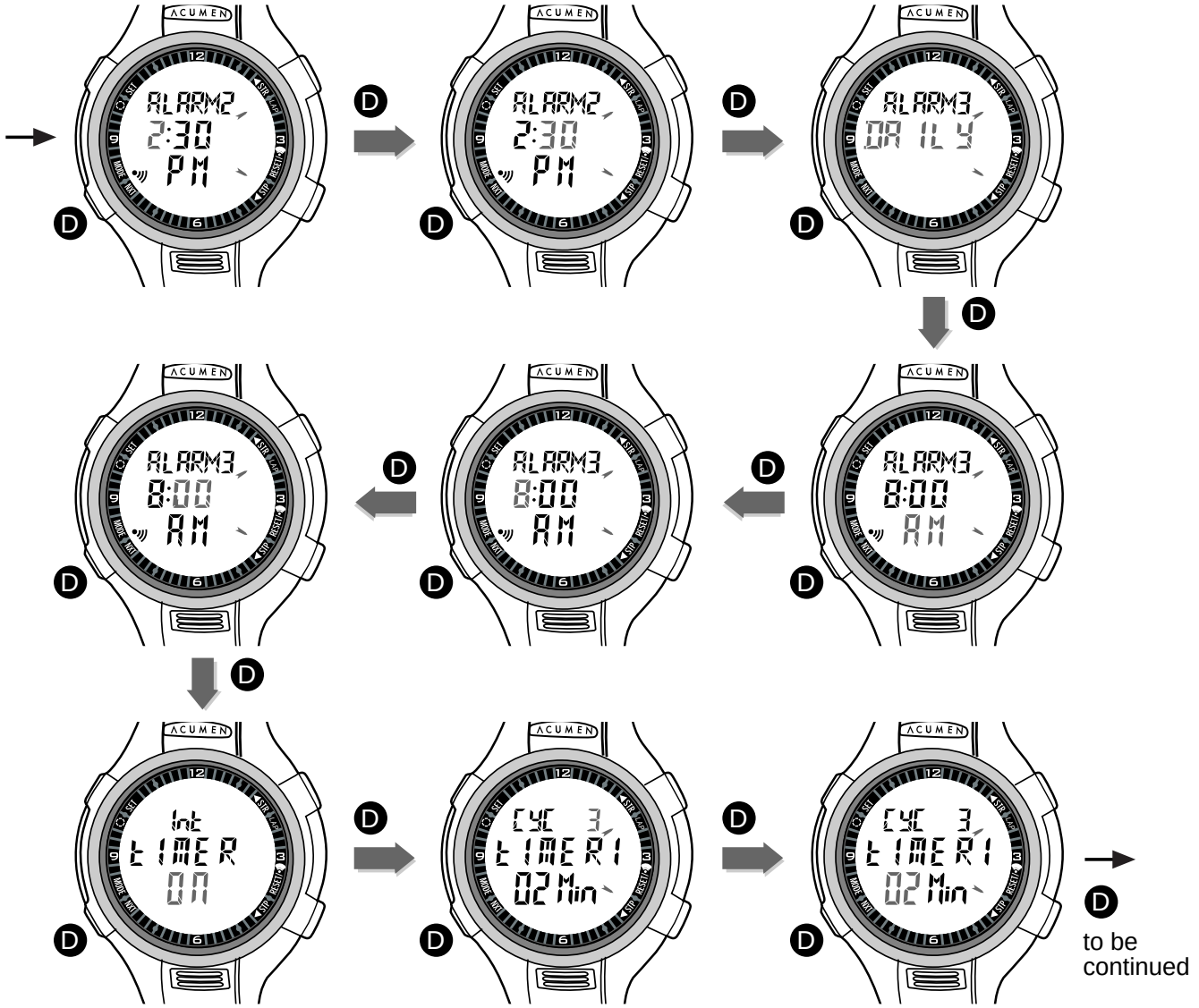

Note:

Press STR/LAP Button Ⓑ or STP/RESET Button Ⓒ to adjust the value.
Press SET Button Ⓐ to select heart rate limit in BPM or percent of your maximum heart rate.

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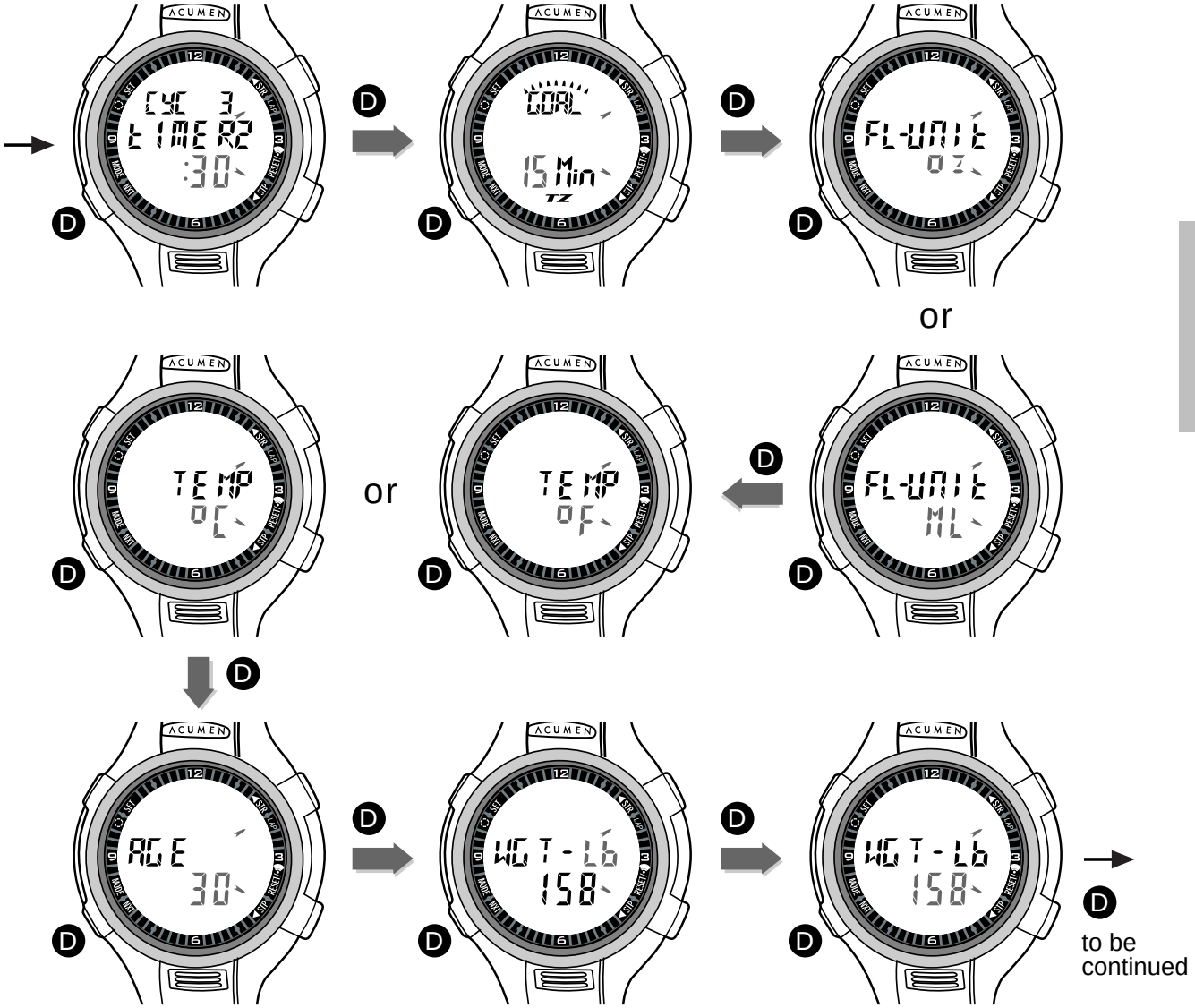

Note:

Press STR/LAP Button Ⓑ or STP/RESET Button Ⓒ to adjust the value.

Press SET Button Ⓐ to select heart rate limit in BPM or percent of your maximum heart rate.

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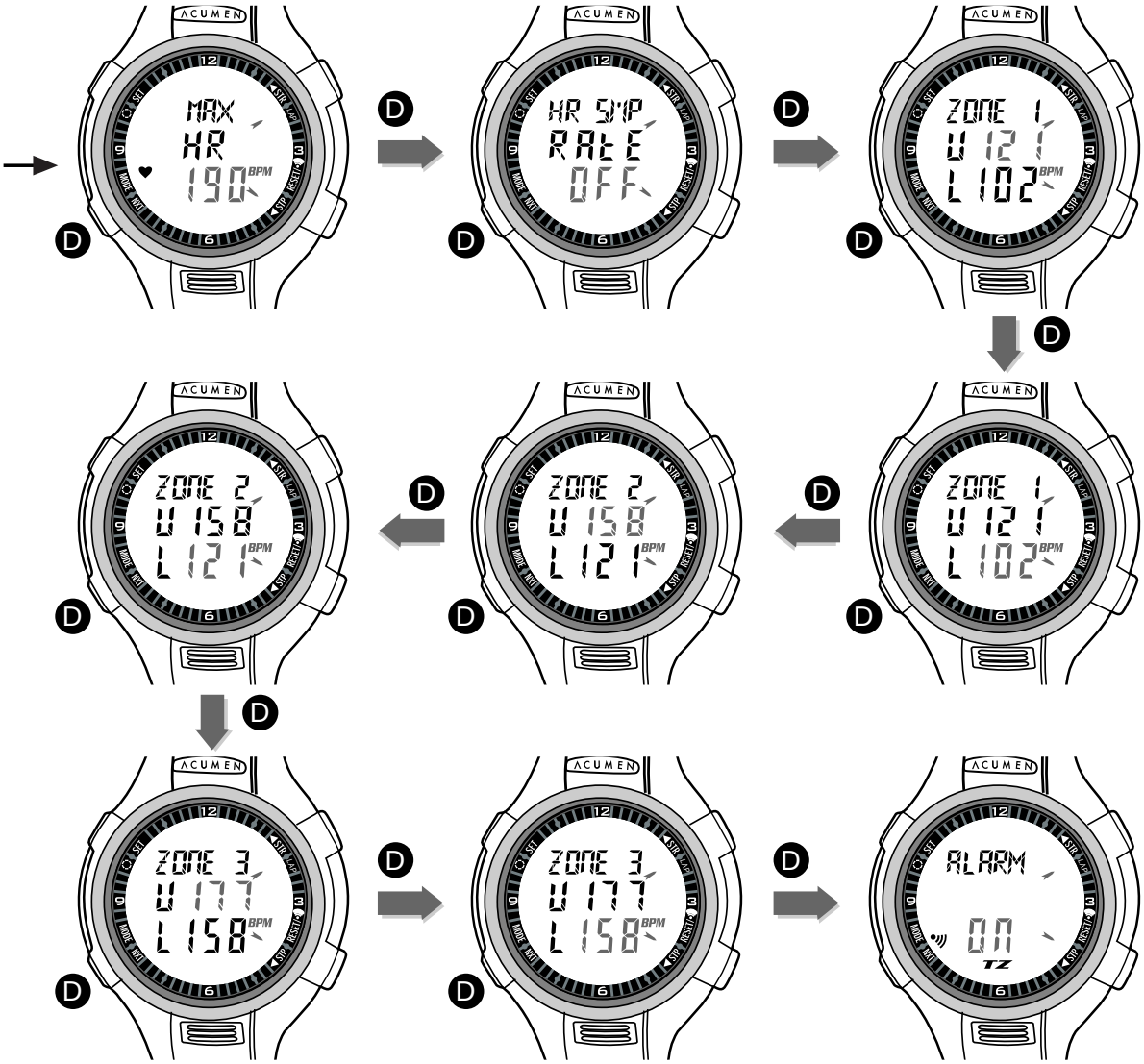

When finished with the setting, press MODE/NXT Button Ⓓ to return to the Analog Time Display.

Note: During the Setting, press & hold SET Button Ⓐ at any time to exit the Setting Mode.

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How to Connect Your Watch with the PC (Optional for EON-2027HS)

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How to Connect Your Watch with the PC (Optional for EON-2027HR)

Note: All PC downloading related function are optional for EON-2027HS. Ask your dealer for the optional Activity Manager PC Software Kit.

Installing the Software

System Requirements:
CPU: Pentium III™ processor compatible or above
Operating system: Windows™ 98 (2nd) or newer
Hard Disc: 50 MB (min)
Ram: 64 MB (min)

Note:

Pentium III™ is a trademark of the Intel Corporation.
Windows is a registered trademark of the Microsoft Corporation.

Step 1: Insert the Activity Manager PC Software (included) into the CD-ROM driver.
Step 2: Installation screen will appear in monitor. Refer to the screen instructions to complete installing the software.
Step 3: Running the software.
Click Start | Program | ACUMEN | Activity Manager | Activity Manager

Connecting the Watch with PC

Attention:

The Temperature, Humidity Heart Rate feature will be deactivated during uploading / downloading.

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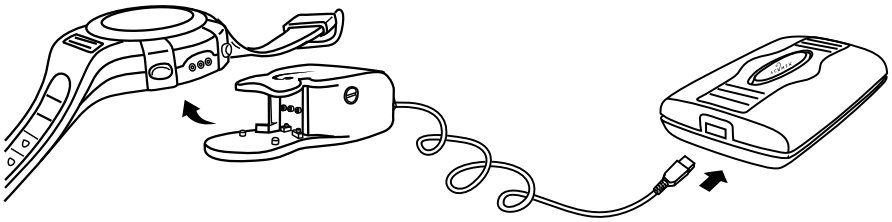
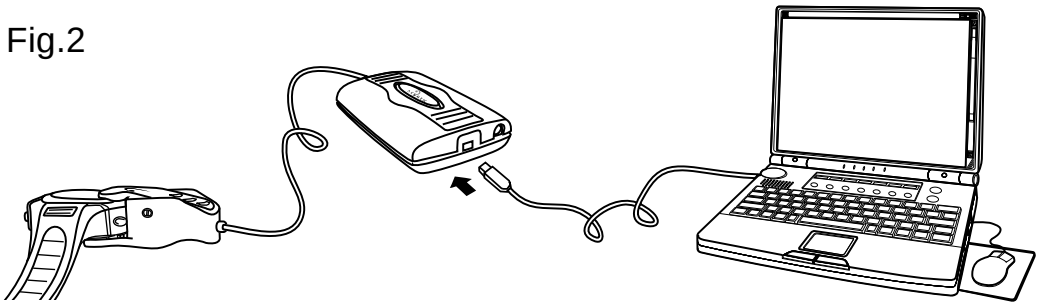
Step 1: Clamp PC Interface & Charger Connector to your watch with one other end connects with the PC Interface & Charger. Make sure the three pins in the clamp are properly in contact with the three contacting points on the watch. (as shown in Figure 1)

Fig.1



Step 2: Plug the USB connector to your PC with the other end to the PC Interface and Charger. (as shown in Figure 2)

Fig.2



Step 3: The wording "PC LINK" on the watch means it is ready for uploading or downloading. (as shown in Figure 3)

Fig.3

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Part III

Technical Reference

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Target Zone & Fitness Training

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Determining Your Target Zone

What is Target Zone Heart Rate Training? In order to benefit the most from your workout, you need to become familiar with your heart rate training zone. By working within the correct range, you will achieve your fitness goals and strengthen your cardiovascular system in less time. Here is basically how it works.

Effective conditioning requires that you maintain your heart rate at the proper level for at least 20 minutes per workout (or per day). At too high of a heart rate your activity can become counter effective. For most people, as your heart rate exceeds 85% (the upper limit), your body begins to become anaerobic and produce acids. This also burns less fat which can begin to burn and strain muscles, and even start storing fat. As for the lower limit, this number tells you when you have reached a level of intensity that is productive. A heart monitor will tune you into your body's internal activity level and helps prevent injury or worse.

To make this part easy for you, the Hydra-Alert™ automatically sets the correct target zone for you after you enter in your age in the heart rate setup mode. The internal auto-setting is based on a generally accepted standard range of 65 to 85% of your maximum HR (where max HR = 207 - Age x 0.7).

There are many variations of formulas for calculating target zones. In most cases they will come up with a range very close to or the same as the auto-setting of the Hydra-Alert™. If you prefer to fine-tune or program your own limits, this can also be done in the HR Setting Mode (see page 43). The internal automatic TZ calculation is based on the following example:

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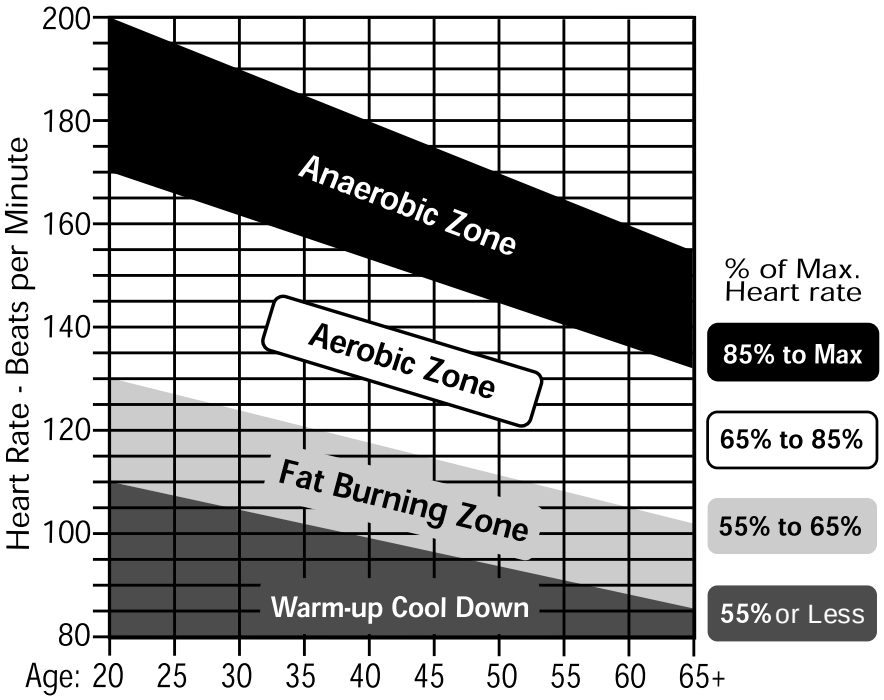
TARGET ZONE CALCULATION FORMULA

207 - Your age x 0.7 = max HR
For a 30 year old person, your
calculations would be as follows:
207 - 30 x 0.7 = 186 Maximum Heart Rate
65% of this number = 121
85% of this number = 158

The calculated exercise range for a 30 year old would be a low of 121 and a high of 158 beats per minute. (You should never exercise near your maximum heart rate (max HR) for any period of time.)

Basic Fitness Tips & Target Zone

Depending on your specific goals, individual fitness level or just on how energetic you feel, you may want to modify your range from one day to the next based on the following chart:



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Stretching

Begin and end every workout with stretching. Stretching done before your workout increases flexibility to help prevent muscle strain or injury and stretching after, loosens tight muscles and helps prevent soreness.

- Stretch before warm up & after cool down.
- Stretch slowly & gently, never bounce or stretch to a point of pain.
- Hold each stretch 30-60 sec. & exhale as you extend stretches.

Warm Up & Cool Down: 55% or Less

Start every exercise with a slow and gradual warm up and end with a slow and gradual cool down. Smoothly easing into and out of strenuous activity helps your body prepare your metabolism and blood flow to efficiently break down fat and change over from one intensity level to another. Going into your target zone too quickly can cause your heart rate to increase too rapidly causing you to loose your energy too soon, strain yourself or possibly worse.

- Slowly bring your heart rate to a level just below the lower limit of your target zone.
- Maintain heart rate at this level for 5-10 min.

The Fat Burning Zone: 55- 65%

The Fat Burning Zone: 55-65% --This range is recommended for those who haven't worked out in a long time, are trying to loose weight, those at a high risk for heart problems or if youíre just not feeling 100% one day. It is intended for low intensity and/or long duration exercise. The lower intensity helps you maintain your exercise for longer periods of time. When exercising for weight loss or starting a new exercise routine, longer duration is more important and much healthier than higher intensity.

- Build up gradually to 30 to 60 min. per workout.
- Workout 3 or 4 times per week.

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The Aerobic Zone: 65- 85%

This range is recommended for those in good physical condition who have been exercising on a consistent basis for an extended period of time. Exercising at this range helps improve your fitness level and prevent injury caused from over training.

- Duration: 20-30 min. per workout.
- Frequency: At least 3 or 4 times per week.

The Anaerobic Zone: 85% to Max HR

To be used by ultra-athletes only and never recommended without close medical approval or supervision. This range is used only for those in extremely good physical condition during races or training for competition. It is typically used for interval training (or short sprints) to help improve or measure endurance levels.

Monitor Your Progress

Track yourself to determine how your overall health and fitness improves and become aware of your various heart rate levels. As your cardiovascular system improves, your normal resting heart rate will decrease. It will take longer to reach your target zone, it will take less and less time for your heart rate to come back down after working out.

If you ever notice your resting heart rate to be higher than usual, it may be a good idea to take a rest from exercise, or at least workout easier that day, Similarly, if you notice that your heart rate doesnít come back down as quickly as usual at the end of your workout, it could be an indication that your workout was more (or too) strenuous, or that you havenít recovered well enough from a previous extraneous workout or injury. These signals in your heart rate could also be an indication of an illness coming on, zess, or a good reason for a check up with your doctor.

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Getting to Know Heat Index

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Getting to Know Heat Index

High humidity makes heat more dangerous because it slows the evaporation of perspiration-the body's natural cooler. That caused outdoor exercise more dangerous even for those in good shape.

Key rules for coping with heat are to drink plenty of water to avoid dehydration and to slow down and cool off. Overheating can cause serious, even life-threatening conditions such as heat stroke.

The Heat Index is to show how hot a particular combination of heat and humidity feels. The Heat Index in the Hydra-Alert™ is a report of the latest weather conditions based on the current temperature and the relative humidity. You can refer to the following Heat Index Chart to know the apparent temperature and to avoid getting into danger during exercise.

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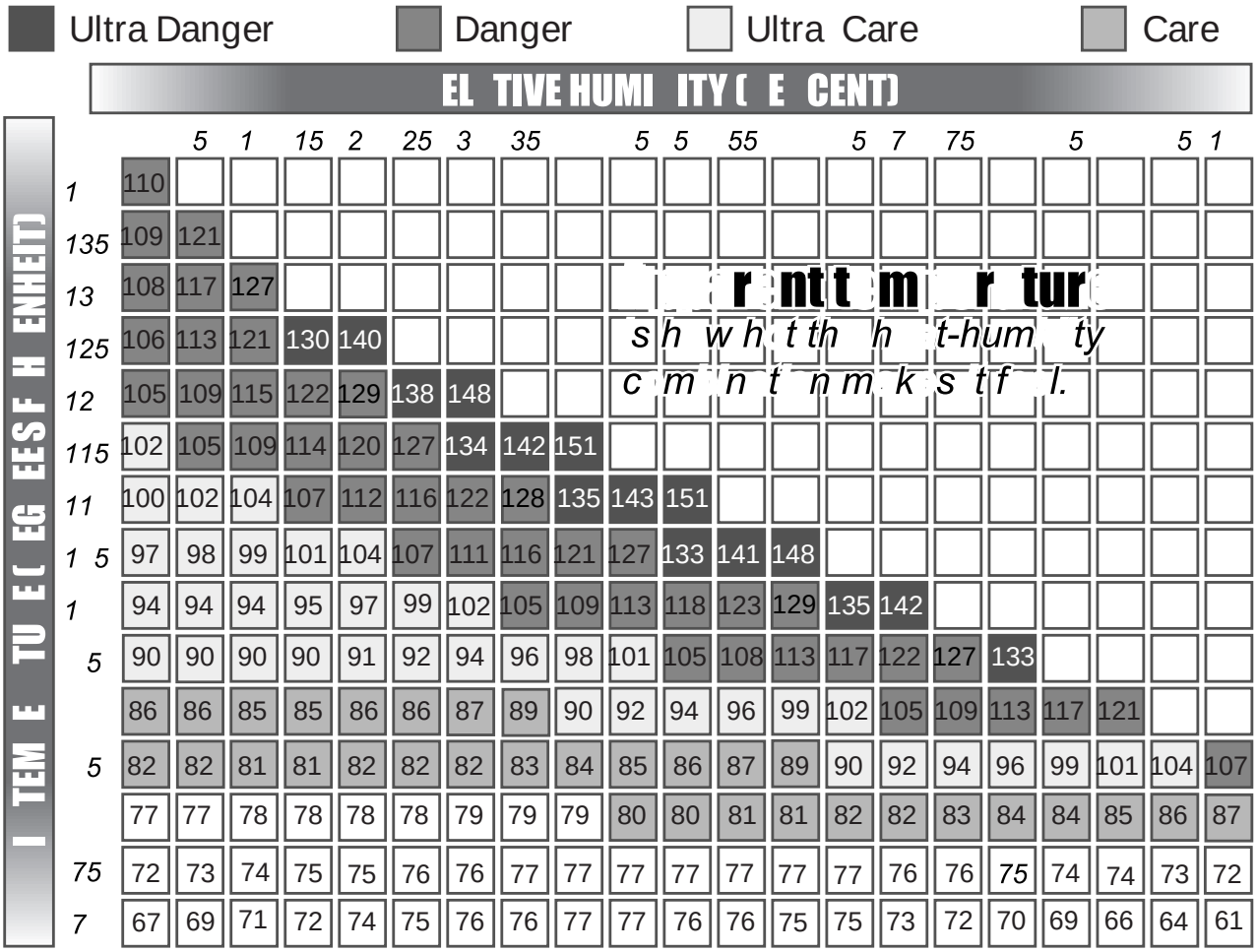
How Temperature and Humidity Combine to Make If Feel Hotter



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Determining Your MET Parameter

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Determining Your MET Parameter

If you do not find the particular activity in your watch, refer to a similar exercise type and look for the corresponding parameter from the table below to set your watch. (Refer to page 36 to set the MET Parameter.)

Table of MET Parameter

Exercise	Intensity Level		
	Light	Medium	High
AEROBICS	6	7, 8	9
BASKETBALL	7	8, 9	10~12
BOWLING	2	3	4
CYCLING	3~5	6~8	9, 10
DANCING	3	4~6	7, 8
FOOTBALL	6, 7	8	9, 10
GOLF	4, 5	6	7
HIKING	3~5	5~8	9~11
JUMPING ROPE	8	9, 10	11, 12
RUNNING	8~10	11~15	16, 17
SKATING(Ice/Inline)	5	6, 7	8, 9
SKIING	6, 7	8~10	11, 12
SKIING(Cross-Country)	5	6, 7	8
SWIMMING	4	5~7	8~10
STAIRS	4	5, 6	7, 8
TENNIS	4, 5	6, 7	8, 9
VOLLEYBALL	3	4, 5	6
WALKING	3	4~6	7

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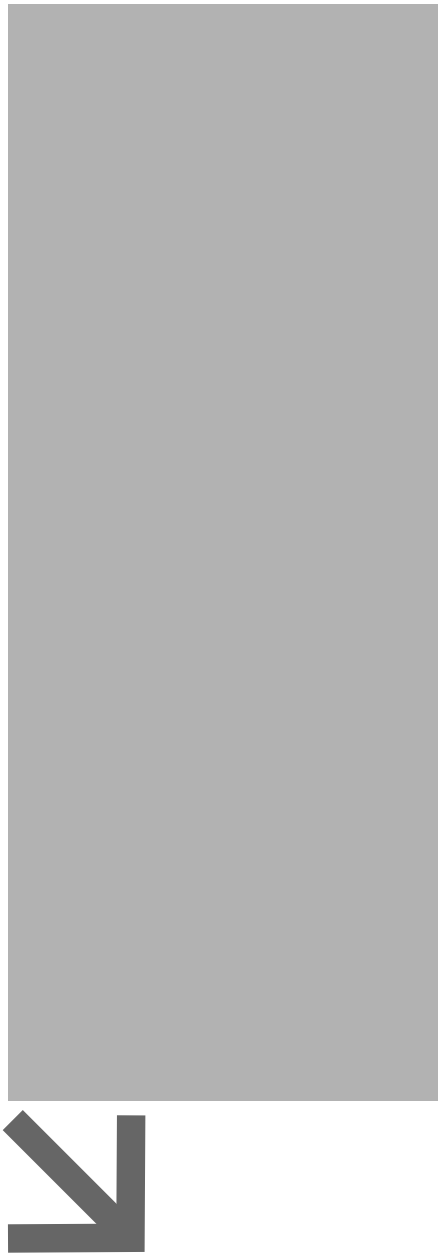
How to Calculate Your Fluid Loss



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How to Calculate Your Fluid Loss

Calorie/ minute =(3.5 x EF x Body weight x Heart rate factor) / 200

- Heart rate factor: 0.95, HR < 65% Max. HR
  1.0, HR = 65-85% Max. HR
  1.05, HR > 85% Max. HR
- EF: Exercise Factor (2-20)
- Body Weight in kg: 30-250kg or 50-500lbs (1kg = 2.21lbs)

Fluid Loss (Ounce) / Hour = (Kcal Per Hour * T + H^2) / 1450

- T: Temperature in °F
- H: Humidity in percentage

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Body Fluid Check™ Monitoring Tips and Guidelines

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Body Fluid Check™ Monitoring Tips and Guidelines

The ACUMEN Hydra-Alert™ provides an indication of the level of dehydration. The purpose of the dehydration reading is to remind an individual to drink fluids.

It takes the human body 12 to 24 hours to replace fluids from heat and exercise. To prevent the harmful effect of excessive dehydration it is necessary to drink before you become thirsty.

The thirst mechanism is not precise in humans. An individual can lose fluids equaling up to 3% of their body weight before the thirst mechanism tells the person they need fluids.

Strength and endurance are reduced by 10-15% after just a 2% loss of body weight, through dehydration.

Most people need more than eight ounce glasses of water per day. The water intake each day needs to be half your body weight in ounces. Do not drink over 32 ounces at any one time. Do not consume more than four ounce glasses of water in any one hour period. Divide the water intake over the entire day.

If the exercise period is under 60 to 90 minutes water is always appropriate. If the exercise period is more than 60 to 90 minutes, a sports drink offers an energy advantage that can enhance stamina and endurance.

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Cardiac drift occurs because dehydration causes a drop in blood volume with less blood being pumped with each heartbeat. The heart rate increases 7 beats per minute for each 1% loss in body weight due to dehydration.

The keys to Proper Hydration:

- Drink on schedule, rather than relying on thirst
- Drink during training as well as competition
- Drink cold water to increase gastric emptying

The opinion of the American College of Sports Medicine on Exercise and Fluid Replacement (ACSM, 1996) is that adequate fluid replacement helps maintain hydration and, therefore promotes the health, safety and optimal physical performance of individuals participating in regular physical activity.

Use of the dehydration indicator on the ACUMEN Hydra-Alert™ will help an individual develop a regimen to maintain appropriate levels of hydration.

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Specifications

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Specifications

Shock Resistant
Standard shock resistance.

Water Resistance
98 feet (or 30 meters). Not intended for diving.

Operating Temperature
32 °F to 122 °F (0 °C to 50 °C)

Heart Rate Range
20-240 BPM

Heart Rate Transmitter/Receiver Distance
0-34 inches

Battery Type
Chest Transmitter: Lithium CR 2050 or CR 2032
Watch: Rechargeable Lithium LIR 2032

Battery Life
Chest Transmitter: Approx. 2.5 years, average use 1 hr/day;
Watch (stand by): 60 days, average use 1 hr/day.

AC/DC Transformer
Input: 120V 60Hz 9VA
Output: DC 9V 400mA

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Technical Display Guide

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Technical Display Guide

Display Items	Default Setting	Range
Time	12:00:00 AM	12/24 HR.Clock
Time Alarm	off,#1,12:00 AM	ON/OFF,#1~3, MO, TU,WE, TH, FR, SA, SU, MO-FR, MO-SA, DAILY, Jun-o1
Date	01/01/2000	TO 12/31/2099
Chrono	00:00:00	24:00:00
Age	30	7-99
Weight Unit		KG/LB
Weight KG	75.0KG	30-250KG
Lbs	150lbs	50-500Lbs
In-Zone-Goal Count Down Timer	OFF	5-60 minutes
TZ Alarm	OFF	ON/OFF
Zone 1	102~121BPM	20-240,OFF
Zone 2	121~158BPM	20-240,OFF
Zone 3	158~177BPM	20-240,OFF
Drink Interval	OFF	1~60 minutes
Humidity		1-99%
Temperature		14-140°F/-10-60°C
Fluid Loss	OFF	0-999.9 Ounce/0-99.99% or 0-99999 ml/0-99.99%
Heat Index		64-151
MET Parameter	5	2-20
Exercise Type	Aerobics	14 Exercise Types
Max MET (VO2 MAX)		By Calibration
Smart Lite	OFF	OFF/ON

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Part IV

Precautions, Warranty, Service and Repair

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General Precautions

Do not operate buttons under water

Although your monitor is water resistant, be sure that you do not operate the buttons under water as pressure can cause them to leak.

Dry off watch after use

Moisture can affect the Temperature and Heat Index reading. Please dry off your watch after use.

Dry off transmitter after use

The transmitter will automatically shut itself off once you have removed it from your chest. However, it is important to thoroughly dry it off after every use since moisture on the electrodes can cause it to remain on longer.

Electrode precautions

Be sure not to excessively twist or bend the electrode portions of the chest transmitter (never bend backwards), especially when storing it. This can permanently damage their conductivity and cause mechanical damage to the internal circuit.

Global Reset

If your monitor should ever get stuck or act erratically due to dropping it, static shock or some other unforeseen reason, this feature will allow you to reset the unit and return all settings back to their internal defaults. To perform this function, press and hold four buttons together for 3 seconds under any mode (display dual LCD). The unit will automatically clear and return to setting mode.

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Caution: Global Reset will CLEAR UP EVERYTHING which Include your Personal Settings and Personal MET Calibration Value.

Battery Replacement

We recommend that you take it to a local jewelry store in order to insure it will maintain its water resistance. Improper battery replacement or service will void the warranty. If you feel comfortable replacing your own batteries, be careful to notice how the old battery comes out and the proper positioning of the hold-down contacts before removing it. Also, be careful to line up the O-ring gasket properly before replacing the battery door cover. To insure water resistance, it's a good idea to smear a small drop of silicone lubricant spray on the rubber O-ring.

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Limited Warranty

This product is warranted by Acumen Inc. for one year from date of purchase (with the exception of batteries and elastic chest strap) against defects in workmanship and material. During that period, these defects will be repaired or the product will be replaced at Acumen Inc. Ìs option without charge. This warranty covers normal consumer usage and does not cover damage which occurs in shipment or failure which results from accident, misuse, abuse, tampering, alteration or disassembling of the product or improper maintenance. This warranty is effective only if the product is purchased and operated in the USA and does not extend to any units which have been used in violation of written instructions furnished by Acumen Inc. or to units which have been altered or modified without authorization of Acumen Inc., or to damage to products or parts thereof which have had the serial number removed, altered, defected or rendered illegible. Product must be returned to authorized dealer for service if purchased outside USA.

Note: Please return product to local authorized dealer for service if purchased outside usa.

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Service and Repair

Do not attempt to repair your product. Should the product malfunction, you should first visit out website at www.acumenicn.com for Consumer Customer Service. If the problem cannot be resolved, you will be asked to return the product to the factory for repair. Under no circumstances should you attempt to open housing and repair the product. Should you do this, your warranty will be voided. Securely package and return the product prepaid to:

Acumen Inc.,
101 A Executive Drive Suite 100,
Sterling, VA 20166 USA.
Website: www.acumeninc.com

To Return for Service

a. First visit our website at www.acumeninc.com/support.htm to obtain a Return Authorization Number.
b. Enclose your name, address and phone number.
c. Enclose the date of purchase (or receipt as a gift)
d. An explanation of the malfunction or reason for return.
e. Seven dollars and fifty cents ($7.50) Check or Money Order payable to Acumen Inc. for return postage and handling.
f. To insure prompt "In warranty" service, be sure to include proof of date of purchase.

We recommend you take the necessary precaution of insuring the parcel.

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Body Fluid Monitoring Pat. NO. US6138079

Angled Belt Clip Pat. NO. US5657514

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Warning

Overexertion can cause serious injury, including heart attacks. Some individuals cannot safely elevate their heart rate to the levels of typically used heart rate training zones. No one should begin an exercise program without first obtaining medical clearance, especially if there is a personal or family history of heart disease, high blood pressure, or if you are over age 40, have diabetes, high cholesterol, smoke cigarettes, are overweight or are taking certain medications. Stop exercising and seek medical attention if you notice signs of overexertion or heart problems, such as pain or pressure in the left or mid-chest area or left neck, shoulder or arm, light-headedness, cold sweat, unusual paleness or fainting. Also note that the signals used by this monitor may interfere with a pacemaker or other implanted devices, consult the manufacturer of the implant device and/ or your physician prior to using this monitor.

ACUMEN™

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